

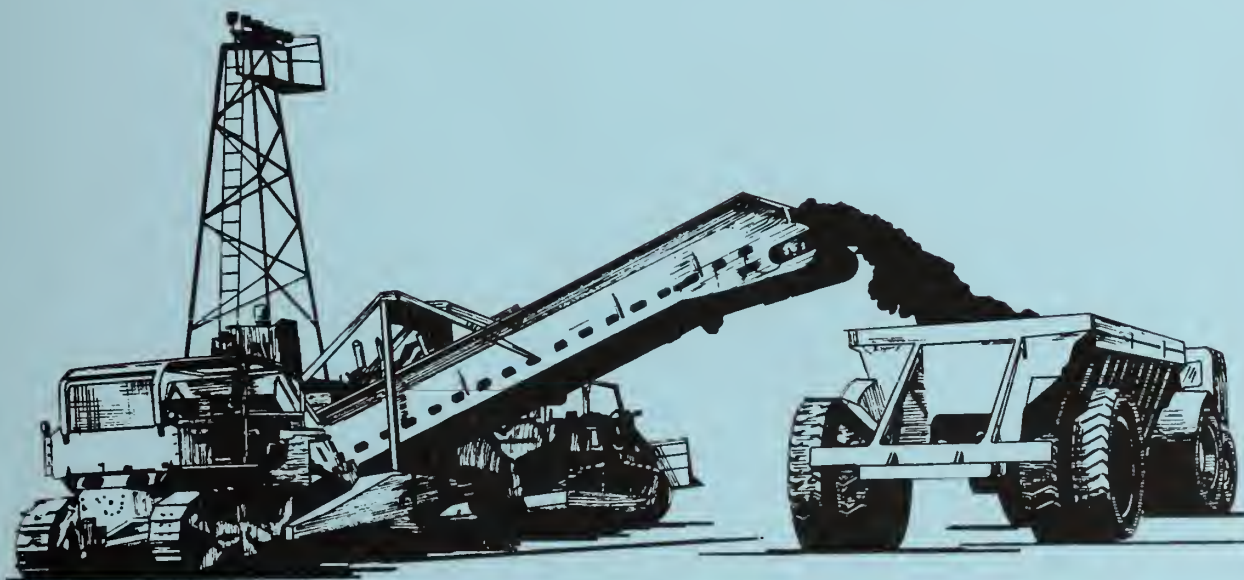
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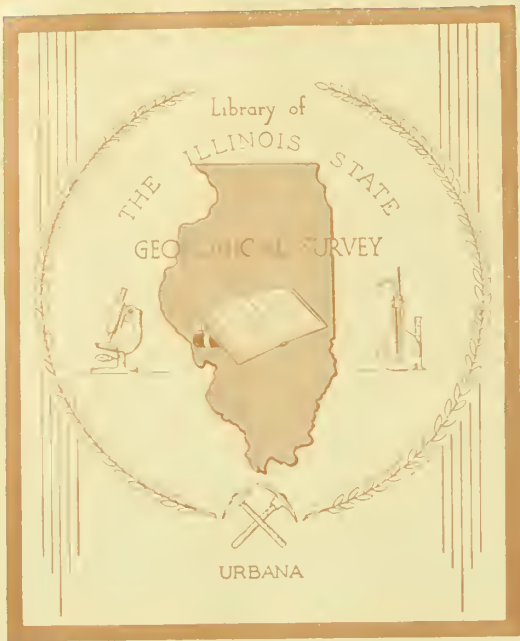
Geol Survey

ILLINOIS MINERALS NOTE 68
December, 1977

ILLINOIS MINERAL INDUSTRY IN 1975

Irma Samson and Amy Dingwell





ILLINOIS STATE GEOLOGICAL SURVEY



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ILLINOIS MINERAL INDUSTRY IN 1975

and

Review of Preliminary Mineral Production Data for 1976

Irma Samson and Amy Dingwell

ABSTRACT

The annual report of mineral production in Illinois in 1975 summarizes for ready reference the output and value of Illinois mineral products mined, and minerals processed and manufactured but not necessarily mined, in Illinois. Illinois ranked eleventh among the states in value of mineral production in 1975, with a total value of \$2,611.9 million. The mineral materials mined had a total value of \$1,383.4 million, with the mineral fuels—coal, crude oil, and natural gas—accounting for 82.8 percent of the total value. Processed mineral materials had a value of \$932.3 million, and mineral products manufactured totaled \$296.1 million in 1975. Illinois led the nation in the mining of fluorspar, stone, and tripoli, and in the production of expanded perlite. Preliminary data indicate that the value of mineral materials mined in Illinois in 1976 reached a new high of \$1,442.3 million.

Detailed production summaries and analyses—including maps, tables, and graphs—are given for all mineral commodities.

ILLINOIS MINERAL INDUSTRY

Three types of operations comprise the mineral industry in Illinois: the actual removal of mineral materials from the ground by mining or other means of extraction; the processing of crude mineral materials, the

majority of them mined outside of Illinois, into basic industrial raw materials; and the manufacturing of mineral products such as coke, lime, and cement from mineral materials, most of which are extracted and processed in Illinois. The commodities in all three categories are listed in table 1, which gives their production and values from 1973 through 1975.

In 1975 Illinois ranked eleventh among the states in mineral production value, according to figures from the U. S. Bureau of Mines. Illinois mineral production in 1975, by mineral commodity, and the state's percentage of the total national output are illustrated in table 2.

Mineral materials mined

The 1975 value of commodities mined in Illinois was \$1,383.4 million, showing a 33.0 percent increase over the record high of \$1,040.1 million in 1974 (table 1). The mineral fuels—coal, crude oil, and natural gas—accounted for 82.8 percent of the 1975 total; industrial and construction materials—clays, fluorspar, sand and gravel, stone, and tripoli—added 16.3 percent; the metals—lead, zinc, silver—along with other minerals such as peat, barite, and gemstones made up the remaining 0.9 percent.

In 1975 Illinois led the nation in the production of fluorspar, stone, and tripoli; and ranked third in the production of peat and fourth in output of sand and gravel and coal. Extraction of mineral materials was reported by 99 of the state's 102

TABLE 1—PRODUCTION AND VALUE OF MINERAL MATERIALS MINEO AND/OR PROCESSED AND MINERAL PRODUCTS MANUFACTURED

Commodity	Unit	1975			1974			1973		
		Quantity	Value (\$1000)	Average unit value (\$)	Quantity	Value (\$1000)	Average unit value (\$)	Quantity	Value (\$1000)	Average unit value (\$)
MINERAL MATERIALS MINEO										
FUELS										
Coal	thousands tons	59,539	\$ 871,651	\$ 14.64	58,073	\$ 580,726	\$ 10.00	61,549	\$412,992	\$ 6.71
Crude oil	thousand bbl	26,067	273,179	10.48	27,553	244,395	7.52	30,669	132,490	4.32
Natural gas	thousand Mcf	1,440	1,008	0.70	1,436	574	0.40	1,638	573	0.35
Natural gas liquids ^a	million bbl	NA ^b	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ^c			\$1,145,837			\$ 825,695			\$ 546,055	
INDUSTRIAL AND CONSTRUCTION MATERIALS										
Clays										
Common	thousand tons	1,310	2,856	2.18	1,484	3,071	2.07	1,660	3,003	1.81
Refractory	thousand tons	57	393	6.94	103	673	6.56	97	609	6.28
Absorbent	thousand tons	W ^d	W	W	W	W	W	W	W	W
Fluorspar (shipments)	tons	99,898	8,957	89.66	153,698	12,247	79.68	165,813	12,278	74.05
Sand and gravel										
Sand and gravel	thousand tons	34,600	59,964	1.73	40,621	59,828	1.47	41,200	55,621	1.35
Sand, industrial	thousand tons	4,400	23,551	5.35	2,084	8,738	4.19	4,976	21,537	3.92
Stone (limestone and dolomite)										
Crushed and broken	thousand tons	60,637	130,025	2.14	63,229	121,693	1.92	66,650	114,007	1.71
Dimension	thousand tons	W	W	W	W	W	W	W	W	W
Tripoli	thousand tons	W	W	W	W	W	W	W	W	W
TOTAL ^c			225,746			206,250			207,055	
METALS										
Lead	tons	1,068	459	429.78	493	222	450.30	541	176	325.32
Zinc	tons	W	W	W	4,104	2,947	718.08	5,250	2,169	413.14
Silver	troy ounces	W	W	W	W	W	W	W	W	W
TOTAL ^c			459			3,169			2,345	
OTHERS										
Peat	thousand tons	96	1,511	15.79	96	1,412	14.74	72	1,037	14.40
Gem stones		NA	2	NA	NA	2	NA	NA	W	NA
Barite	thousand tons	W	W	W	W	W	W	—	—	—
TOTAL ^c			1,513			1,414			1,037	
Values that cannot be disclosed (W)			9,886			3,527			2,792	
Total value of mineral materials mined ^c			1,383,441			1,040,055			759,284	
MINERAL MATERIALS PROCESSED										
Natural gas liquids	thousand bbl	W	W	W	W	W	W	8,650	23,919	2.77
Ground mica		—	—	—	W	W	W	W	W	W
Expanded perlite		W	W	W	W	W	W	W	W	W
Barite, ground		W	W	W	W	W	W	W	W	W
Gypsum, calcined		W	W	W	W	W	W	W	W	W
Exfoliated vermiculite		W	W	W	W	W	W	W	W	W
Iron oxide pigments		W	W	W	W	W	W	W	W	W
Bismuth		NA	NA	NA	NA	NA	NA	NA	NA	NA
Primary slab zinc		NA	NA	NA	NA	NA	NA	NA	NA	NA
Secondary slab zinc		NA	NA	NA	NA	NA	NA	NA	NA	NA
Columbium		NA	NA	NA	NA	NA	NA	NA	NA	NA
Pig iron	thousand tons	5,218	905,531	173.73	7,184	1,003,573	139.18	7,964	585,054	75.24
TOTAL ^c			905,531			1,003,573			608,973	
Values that cannot be disclosed (W)			26,781			68,930			26,435	
Total value of mineral materials processed			932,312			1,072,503			635,408	
MINERAL PRODUCTS MANUFACTURED										
Cement (shipments)										
Portland	thousand tons	1,374	42,756	31.12	1,460	41,023	28.10	1,572	36,064	22.94
Masonry	thousand tons	69	3,658	53.01	69	3,228	46.68	88	2,901	32.97
Clay products, estimated		—	49,730	—	—	56,898	—	—	56,453	—
Lime	tons	W	W	W	W	W	W	W	W	17.78
Sulfur ^e	tons	W	W	W	W	W	W	W	W	W
Coke	thousand tons	1,924	168,619	87.64	1,912	125,694	65.74	1,941	83,308	42.92
Glass		NA	NA	NA	NA	NA	NA	NA	NA	NA
TOTAL ^c			264,763			226,843			178,726	
Values that cannot be disclosed (W)			31,362			27,956			21,974	

TABLE 1 - continued

Commodity	Unit	1975			1974			1973		
		Quantity	Value (\$1000)	Average unit value (\$)	Quantity	Value (\$1000)	Average unit value (\$)	Quantity	Value (\$1000)	Average unit value (\$)
Total value of mineral products manufactured			296,125			254,799			200,700	
STATE TOTAL ^c			\$2,611,877			\$2,367,357			\$1,595,392	

^aProduced in Illinois, according to the American Petroleum Institute.

^bNA = not available.

^cData may not add to totals shown because figures have been rounded.

^dW = withheld to avoid disclosing individual company confidential data.

^eValues and amounts of sulfur processed are included with total of mineral products manufactured to avoid disclosing individual company confidential data on lime.

Source: U.S. Bureau of Mines, Illinois Department of Mines and Minerals, Illinois State Geological Survey.

TABLE 2—ILLINOIS MINERAL PRODUCTION, ITS VALUE AND PERCENTAGE OF UNITED STATES MINERAL PRODUCTION, 1975

Commodity	Unit	Illinois		United States		Illinois percentage of United States Production	
		Quantity	Value (\$1000)	Quantity	Value (\$1000)	Quantity	Value
Fluorspar shipments	thousand tons	100	8,957	140	10,888	71.43	82.26
Peat, commercial sales	thousand tons	96	1,511	746	12,294	12.87	12.29
Coal	thousand tons	59,539	871,651	648,438	12,475,947	9.18	6.99
Pig iron	thousand tons	5,218	905,531	71,360	NA ^a	7.31	—
Stone	thousand tons	60,637	130,025	901,490	2,024,000	6.73	6.42
Sand and gravel	thousand tons	39,000	83,515	789,432	1,340,319	4.94	6.23
Coke	thousand tons	1,924	168,619	57,207	4,607,292	3.36	3.66
Clays ^b	thousand tons	1,366	3,249	49,388	424,996	2.77	0.76
Zinc	thousand tons	W ^c	W	469	366,087	—	—
Cement shipments	thousand tons	1,443	46,414	69,664	2,188,394	2.07	2.12
Crude oil	thousand bbl	26,067	273,182	3,056,779	23,116,059	0.85	1.18
Lead	thousand tons	W	W	621	267,230	—	—
Natural gas liquids	thousand bbl	NA	NA	595,958	2,771,205	—	—
Natural gas	million cu ft	1,440	1,008	20,108,661	8,945,062	0.01	0.01
Lime	thousand	W	W	19,133	523,805	—	—

^aNA = not available.

^bExcluding fuller's earth

^cW = withheld to avoid disclosing confidential data from individual companies.

Source: U. S. Bureau of Mines, Illinois State Geological Survey, Illinois Department of Mines and Minerals, and American Petroleum Institute.

TABLE 3—VALUE OF MINERAL MATERIALS MINED AND/OR PROCESSED AND
MINERAL PRODUCTS MANUFACTURED IN ILLINOIS, 1975, BY COUNTY

County	Mineral materials mined, in order of value	Value (\$1000)	Mineral materials processed, in order of value	Value (\$1000)	Mineral products manufactured, in order of value	Value (\$1000)	Total value (\$1000)
Adams	Stone; sand and gravel; crude oil	W ^a	Iron oxide pigments ^b	W	—	—	W
Alexander	Tripoli; sand and gravel	W	—	—	—	—	W
Bond	Crude oil; clay natural gas; sand and gravel	W	—	—	—	—	W
Boone	Stone; sand and gravel	W	—	—	—	—	W
Brown	Stone; crude oil; clay	W	—	—	Clay products	W	626
Bureau	Sand and gravel	946	—	—	Clay products	W	W
Calhoun	Stone	52	—	—	—	—	52
Carroll	Stone	657	—	—	—	—	657
Cass	Sand and gravel	11	—	—	—	—	11
Champaign	Sand and gravel	1,582	—	—	—	—	1,582
Christian	Coal; crude oil; stone	29,439	—	—	—	—	29,439
Clark	Stone; crude oil ^c ; sand and gravel	W	—	—	—	—	W
Clay	Crude oil; stone; sand & gravel	13,631	—	—	—	—	13,631
Clinton	Crude oil; sand & gravel; stone	W	—	—	—	—	W
Coles	Stone; crude oil; natural gas; sand and gravel	W	—	—	—	—	W
Cook	Stone; sand and gravel; clay; peat	W	Pig iron ^b ; expanded perlite; sulfur ^d ; secondary slab zinc ^e ; bismuth ^e	W	Coke ^b ; lime; clay products	32,795	65,918
Crawford	Crude oil; sand and gravel	W	Sulfur	W	—	—	11,666
Cumberland	Crude oil ^c ; sand and gravel; stone	W	—	—	—	—	W
De Kalb	Stone; sand and gravel	W	Exfoliated vermiculite; expanded perlite	W	—	—	1,565
De Witt	Crude oil	1,449	—	—	—	—	1,449
Douglas	Coal; stone; crude oil	W	Natural gas liquids	W	—	—	W
Du Page	Sand and gravel; stone	W	Exfoliated vermiculite	W	Clay products; glas ^e	W	10,808
Edgar	Crude oil	1,098	—	—	—	—	1,098
Edwards	Crude oil	4,758	—	—	—	—	4,758
Effingham	Crude oil; sand and gravel; stone	W	—	—	—	—	W
Fayette	Crude oil; stone; clay; sand and gravel	W	—	—	Clay products; lime	W	27,564
Ford	Sand and gravel; stone	W	—	—	—	—	W
Franklin	Coal; crude oil	78,385	—	—	—	—	78,385
Fulton	Coal; sand and gravel	38,953	—	—	—	—	38,953
Gallatin	Coal; crude oil; sand and gravel; natural gas	W	—	—	—	—	W
Greene	Stone	W	—	—	—	—	W
Grundy	Sand and gravel; clay; stone	3,684	—	—	Clay products	W	W
Hamilton	Crude oil	6,803	—	—	—	—	6,803
Hancock	Stone	1,151	—	—	—	—	1,151
Hardin	Fluorspar; stone; zinc; lead; primary barite; silver; Gemstones; germanium ^e	17,717	—	—	—	—	17,717
Henderson	Stone	1,196	—	—	—	—	1,196
Henry	Stone	W	—	—	—	—	W
Iroquois	Stone	W	—	—	—	—	W
Jackson	Stone; coal; sand and gravel; crude oil	W	—	—	—	—	W
Jasper	Crude oil	6,430	—	—	—	—	6,430
Jefferson	Coal; crude oil	95,566	—	—	—	—	95,566
Jersey	Stone	257	—	—	—	—	257
Jo Daviess	Sand and gravel; stone	W	—	—	—	—	W
Johnson	Stone; coal	W	—	—	—	—	W
Kane	Sand and gravel; stone ^f ; peat	W	Iron oxide pigments ^b	W	Clay products	W	16,441
Kankakee	Stone; clay; sand and gravel	W	—	—	Lime	W	W
Kendall	Stone; sand and gravel	W	—	—	—	—	W
Knox	Coal; stone	W	—	—	Clay products	W	24,031
Lake	Sand and gravel; peat	W	Calcined gypsum; expanded perlite; columbium ^e	1,662	Clay products; glas ^e ; fiber glas ^e	W	3,879
La Salle	Sand and gravel; stone; clay	80,861	—	—	Cement; clay products; glas ^e	24,562	55,423
Lawrence	Crude oil; sand and gravel	36,096	—	—	Lime	W	W
Lee	Stone; sand and gravel	W	—	—	Cement	W	W
Livingston	Stone; clay	5,614	—	—	Clay products	W	W
Logan	Sand and gravel; stone	W	—	—	Glas ^e	—	W
McDonough	Crude oil; stone; clay	1,348	—	—	Clay products	W	W
McHenry	Sand and gravel	8,691	—	—	—	—	8,691
McLean	Sand and gravel; stone	2,518	—	—	Fiber glas ^e	—	2,518
Macon	Sand and gravel; crude oil	1,356	—	—	Glas ^e	—	1,356
Macoupin	Coal; stone; crude oil	W	Exfoliated vermiculite	W	—	—	W
Madison	Stone; crude oil; sand and gravel	4,673	Pig iron ^b	W	Coke ^b ; clay products; lime; glas ^e	W	W
Marion	Crude oil; stone	W	Secondary slab zinc ^e	—	Glas ^e	—	W
Marshall	—	—	—	—	—	—	—
Mason	Sand and gravel	W	—	—	—	—	W
Massac	Sand and gravel	W	—	—	Cement	W	W

TABLE 3 - continued

County	Mineral materials mined, in order of value	Value (\$1000)	Mineral materials processed, in order of value	Value (\$1000)	Mineral products manufactured, in order of value	Value (\$1000)	Total value (\$1000)
Menard	Stone	W	—	—	—	—	W
Mercer	Stone	W	—	—	—	—	W
Monroe	Stone	W	—	—	—	—	W
Montgomery	Coal; stone; crude oil	42,920	—	—	Glass	—	42,920
Morgan	—	—	—	—	—	—	—
Moultrie	Sand and gravel; crude oil; stone	W	—	—	—	—	W
Ogle	Stone; sand and gravel	W	—	—	—	—	W
Peoria	Coal; sand and gravel; stone	W	—	—	—	—	W
Perry	Coal; crude oil; stone	171,173	—	—	—	—	171,173
Piatt	Sand and gravel; stone	W	—	—	—	—	W
Pike	Stone; sand and gravel	W	—	—	—	—	W
Pope	Fluorspar ⁹ ; lead ⁹ ; zinc ⁹ ; silver ⁹ ; barite ⁹ ; stone	W	—	—	—	—	W
Pulaski	Clay; stone	W	—	—	Clay products	W	7,302
Putnam	—	—	—	—	—	—	—
Randolph	Coal; stone; crude oil; sand and gravel	W	—	—	—	—	W
Richland	Crude oil	10,796	—	—	—	—	10,796
Rock Island	Stone; sand and gravel	W	—	—	—	—	W
St. Clair	Coal; stone; crude oil	57,769	Iron oxide pigments ^b ; primary slab zinc ^c ; ground barite	W	Glass ^e	—	W
Saline	Coal; crude oil; natural gas; stone	31,819	—	—	—	—	31,819
Sangamon	Coal; sand and gravel; crude oil; stone	26,174	Iron oxide pigments ^b	W	—	—	26,174
Schuyler	Sand and gravel	W	—	—	—	—	W
Scott	Stone; clay	W	—	—	Clay products	W	1,276
Shelby	Crude oil; sand and gravel; stone	W	—	—	—	—	W
Stark	Coal; sand and gravel	W	—	—	—	—	W
Stephenson	Stone; sand and gravel	W	—	—	—	—	W
Tazewell	Sand and gravel; clay	W	—	—	—	—	W
Union	Stone; sand and gravel	W	—	—	—	—	W
Vermilion	Stone; sand and gravel; coal	W	—	—	—	—	W
Wabash	Coal; crude oil; sand and gravel	29,994	—	—	—	—	29,994
Warren	Stone	W	—	—	Clay products	W	4,186
Washington	Crude oil; stone	7,809	—	—	—	—	7,809
Wayne	Crude oil	28,839	—	—	—	—	28,839
White	Crude oil; sand and gravel	32,097	—	—	—	—	32,097
Whiteside	Peat; stone; sand and gravel	2,811	—	—	—	—	2,811
Will	Stone; sand and gravel	13,765	Expanded perlite	W	Clay products; lime; glass ^e	5,532	W
Williamson	Coal; crude oil; natural gas	50,306	—	—	—	—	50,306
Winnebago	Sand and Gravel; stone	3,325	—	—	Clay products	W	W
Woodford	Sand and gravel	2,391	—	—	—	—	2,391
Undistributed	Crude oil; stone; sand and gravel	6,864	Pig iron ^d ; iron oxide pigments ^b (W)	905,531	Coke ^o	168,619	1,081,014
Values that cannot be disclosed (W)		426,632		25,118		64,615	550,688
Total		1,383,444		932,311 ^d		296,123 ^d	2,611,878

^aW = withheld to avoid disclosing confidential data from individual companies

^bPig iron, coke, iron oxide pigments not available by county.

^cCrude oil value included with Cumberland County.

^dSulfur values included with mineral products manufactured to avoid disclosing individual companies' confidential data on lime.

^eValue unknown; not included in total.

^fIncluding dimension stone

⁹Fluorspar, barite, and metals values included with Hardin County.

Source: U.S. Bureau of Mines, Illinois Department of Mines and Minerals, and Illinois State Geological Survey.

counties (table 3). Perry County, with the highest production value of any Illinois County, produced coal, oil, and crushed and broken stone at a total value of \$171.2 million, approximately 12.4 percent of the state total.

Mineral materials processed

In 1975 twelve Illinois counties processed raw mineral materials, mainly from other states (table 3).

Minerals processed were pig iron, natural gas liquids, expanded perlite, ground barite, calcined gypsum, exfoliated vermiculite, iron oxide pigments, sulfur, and both primary and secondary slab zinc, with a total value of \$932.3 million. Pig iron produced in Cook and Madison Counties contributed 97.1 percent of that total. In addition, elemental sulfur was recovered; its value is included with mineral products manufactured to avoid disclosing confidential data

from individual companies.

Illinois ranked first in the production of expanded perlite and second in output of iron oxide pigments.

Mineral products manufactured

Mineral products manufactured in Illinois in 1975, primarily from materials mined within the state, included cement, clay products, lime, sulfur, coke, and glass. Their combined value was \$296.1 million, an increase from the \$254.8 million reported in 1974. Coke accounted for 56.9 percent of the total value, clay products for 16.8 percent. No figures were available for the value of glass manufactured in Illinois.

Employment and wages

Illinois Department of Labor data indicate that the Illinois mineral industry employed 183,400 persons in 1975, including 25,900 in mining, quarrying, and oil and gas extraction; 80,200 in mineral processing; and 51,300 in manufacturing mineral products (table 4).

Average weekly earnings of workers in the mining sector of the Illinois mineral industry were \$226.28, an increase of 11.7 percent from the 1974 average earnings. Average weekly earnings of bituminous coal miners, \$318.69, were the highest in

the mineral industries. While average earnings increased, the average number of hours worked per week remained essentially the same. Table 4 gives more detailed statistical data on employment in the mineral industry in Illinois for 1974 and 1975.

Transportation of minerals and mineral products

The shipment of mineral materials forms a considerable part of the Illinois transportation industry. In 1975 more than 95 million tons of mineral materials were shipped by truck, and more than 54 million tons by railroad. Crushed stone comprised approximately 55 percent of the total tonnage shipped by truck, and sand and gravel about 30 percent. Coal comprised slightly less than 90 percent of the railroad tonnage. Other materials such as pig iron, coke, and clay products were shipped by railroad, truck, and barge. Crude oil and natural gas were transported by pipeline.

Consumption of minerals and energy in Illinois

Illinois, as a leading manufacturing state, consumes a large variety of mineral materials each year. Data for some of the mineral materials used in Illinois during 1974 and 1975 are shown in table 5.

TABLE 4—NUMBER OF EMPLOYEES AND AVERAGE WEEKLY EARNINGS, HOURS WORKED, AND HOURLY WAGES IN ILLINOIS MINERAL INDUSTRY, 1974 and 1975

Class of employment	1975				1974			
	Number of employees (x 1000)	Average weekly earnings (\$)	Average number of hours worked per week	Average hourly earnings (\$)	Number of employees (x 1000)	Average weekly earnings (\$)	Average number of hours worked per week	Average hourly earnings (\$)
Mining	25.9	296.28	42.5	6.97	23.7	265.24	42.4	6.25
Bituminous coal	13.8	318.69	41.5	7.68	11.9	289.59	41.5	6.98
Oil and gas extraction	5.7	254.58	42.6	5.97	5.4	211.87	42.1	5.04
Other	6.5	253.06	45.1	5.62	6.4	229.19	44.7	5.13
Mining processing								
Blast furnaces and basic steel	47.3	267.95	39.0	6.88	51.4	257.78	41.3	6.24
Primary metal industries	20.4	249.62	40.2	6.21	20.6	221.66	42.3	5.24
Petroleum refining	12.5	297.87	41.1	7.25	12.6	265.76	42.6	6.24
Mineral product manufacturing								
Glass and glass products	12.5	234.94	41.3	5.69	13.4	208.90	40.7	5.13
Cement and clay products	4.0	181.82	39.1	4.66	4.6	170.16	38.6	4.41
Stone and other mineral products	18.4	224.38	41.0	5.48	19.0	216.30	42.7	5.06
Petroleum and coal products	16.4	297.87	41.1	7.25	17.2	251.37	43.0	5.85

Source: Illinois Department of Labor, Bureau of Employment Security.

On the average, Illinois consumption of most mineral commodities is about 5.6 percent of the total consumed in the nation, approximately proportionate to its population, which, according to the U. S. Census Bureau, comprises 5.3 percent of the national total.

In 1975 Illinois consumed an estimated 3,504.3 trillion Btu of energy, or 5.37 percent of the total energy consumed in the United States (table 6). A large part—93.2 percent—came from fossil fuels. In 1974, Illinois energy consumption was estimated at 3,478.7 trillion Btu, or 5.21 percent of the U. S. total.

Trends in total energy used in Illinois are shown in figure 1. In spite of an increase in total energy consumption in Illinois from 2,215 trillion Btu in 1957 to 3,504 trillion Btu in 1975, the role of coal as a source of energy has declined while that of natural gas and oil products has increased. This trend reversed

slightly in 1975, probably as a result of higher prices and decreasing supplies of natural gas and oil. The use of nuclear power also is growing rapidly, partly replacing coal in the Illinois energy market.

INDIVIDUAL COMMODITIES

Mineral materials mined

The minerals mined in Illinois are categorized into four groups: fuels, industrial and construction materials, metals, and other materials.

Fuels

Coal

Production

Illinois maintained its rank as fourth among the nation's coal-producing states with a total of 59.5 million tons valued at \$871.4 million.

TABLE 5—SELECTED MINERAL MATERIALS USED IN ILLINOIS, 1974 AND 1975

Commodity	Quantity unit	1975			1974		
		United States	Illinois	Illinois percentage of U.S. consumption	United States	Illinois	Illinois percentage of U.S. consumption
FUELS							
Coal	million tons	556.3	41.9	7.53	552.7	39.1 ^a	7.07
Coke	million tons	52.9	3.1	5.86	61.6	3.1	5.03
Distillate fuel oil	million bbl	1,043.6	52.6	5.04	1,081.1 ^a	54.0 ^a	4.99
Gasoline	million bbl	2,482.7	121.1	4.88	2,425.1	119.6	4.93
Kerosine	million bbl	58.0	2.7	4.66	64.4	3.3	5.12
Liquified petroleum gases and ethane	million bbl	486.4	19.3	3.97	512.8	17.5	3.41
Natural gas	trillion cu ft	20.4	1.1	5.39	22.1	1.2	5.43
Residual fuel oil	million bbl	895.3	28.0	3.13	963.2	28.5	2.96
METALS							
Pig iron	million tons	79.6	5.3	6.66	96.8	7.3	7.54
Lead	thousand tons	1,297.1	NA ^b	NA	1,599.0	NA	NA
Zinc (slab)	thousand tons	925.3	NA	NA	1,287.7 ^a	NA	NA
CONSTRUCTION MATERIALS							
Air-cooled slag	million tons	22.2	NA	NA	26.2 ^a	NA	NA
Asphalt	million tons	27.6	1.8	6.52	31.0 ^a	1.8	5.81
Cement (portland)	million tons	67.8	1.4	2.06	79.5	3.6	4.53
Road oil	million tons	1.0	0.1	10.00	1.3	0.2	15.38
Sand and gravel	million tons	789.4	39.0	4.94	904.6 ^a	42.7	4.72
Stone	million tons	901.5	60.6	6.72	1,041.6 ^a	63.2	6.07
AGRICULTURAL & CHEMICAL MATERIALS							
Feldspar	thousand tons	685.1	NA	NA	762.8 ^a	NA	NA
Fluorspar	thousand tons	1,244.9	46.5	3.74	1,524.5 ^a	75.1	4.93
Lime ^c	thousand tons	19,365.0	877.1	4.53	22,029.0 ^a	1,165.0	5.29
Salt							
Evaporated	thousant tons	5,345.0	358.0	6.70	5,922.0 ^a	355.0	5.99
Rock	thousand tons	14,283.0	1,051.0	7.36	14,835.0 ^a	1,073.0	7.23

^aRevised.

^bNA = not available

^cExcludes regenerated lime.

Source: U.S. Bureau of Mines.

TABLE 6—FUELS AND ENERGY CONSUMED IN ILLINOIS, 1974 AND 1975

Fuel	Units	1975	1974	Change from 1974-1975 (%)	Trillion Btu ^a	
					1975	1974
Coal	thousand tons	41,455	39,054	+ 6.1	912.0	859.2
Natural gas	million cu ft	1,107,900	1,163,215	- 4.8	1,142.2	1,199.3
Gasoline	thousand bbl	121,127	119,637	+ 1.2	635.7	627.8
Kerosine	thousand bbl	2,722	3,274	- 16.9	15.4	18.6
Distillate fuel oil	thousand bbl	52,603	53,950	- 2.5	306.4	314.3
Residual fuel oil	thousand bbl	28,048	28,521	- 1.7	176.3	179.4
Liquid petroleum gases	thousand bbl	19,315	17,487	+ 10.5	77.5	70.1
Hydropower	thousand kilo- watt hr	103,722	106,476	- 2.6	1.1	1.1
Nuclear power	million kilo- watt hr	22,315	19,592	+ 13.9	237.9	208.9
Total					3,504.5	3,478.7
Illinois percentage of United States total energy consumption					5.37	5.21
Percentage of total energy consumed in Illinois, by source:						
Coal					26.03	24.70
Natural gas					32.59	34.48
Oil products					34.56	34.79
Nuclear power					6.79	6.00
Hydropower					0.03	0.03
					100.00	100.00

^aFuel conversion factors: Coal - 22,000,000 Btu/ton (@ 11,000 Btu/lb); Natural gas - 1,031 Btu/Mcf; LPG - 4,011,000 Btu/bbl; Gasoline - 5,248,000 Btu/bbl; Kerosine - 5,670,000 Btu/bbl; Distillate fuel oil - 5,825,000 Btu/bbl; Residual fuel oil - 6,287,000 Btu/bbl; Nuclear power - 10,660 Btu/net kwh; Hydropower - 10,478 Btu/kwh.

Although the increase in production from 1974 was only 2.3 percent, total value in 1975 increased 49.7 percent as a result of the increase in the average f.o.b. mine value of coal from \$10.00 to \$14.64 per ton.

Coal was mined in 20 counties in 1975 (table 7). The 10 leading counties—Perry, Randolph, Jefferson, Franklin, St. Clair, Williamson, Macoupin, Montgomery, Fulton, and Douglas—together contributed 81.5 percent of the total production (fig. 2). Surface mines operated in 14 counties; however, in only three counties—Perry, Randolph, and Fulton—were more than 2 million tons of coal mined by the surface method. Underground mines operated in 13 counties, but only in six of them (Jefferson, Franklin, Macoupin, St. Clair, Montgomery, and Douglas) were more than 2 million tons mined by this method. In Perry County, the state's leading coal-producing county,

all coal was surface mined.

A total of 4,559 million tons of coal has been produced from Illinois coal mines since 1833 (table 8). Of this amount, approximately 20 percent is estimated to have been surface mined and 80 percent underground mined. Extensive surface mining did not begin in Illinois until the mid 1920s.

The number of coal mines operating in Illinois has been generally declining since the early 1950s, when there were more than 150 mines. In 1975, however, there were 57 mines—two more than in 1974—in operation in Illinois. Of the 57 mines, 36 were surface mines and 21 underground mines. The 31.9 million tons produced from the 21 underground mines was 53.5 percent of the total Illinois coal production (table 7). Since 1966 the amount of coal produced in Illinois by underground mining has been gradually increasing,

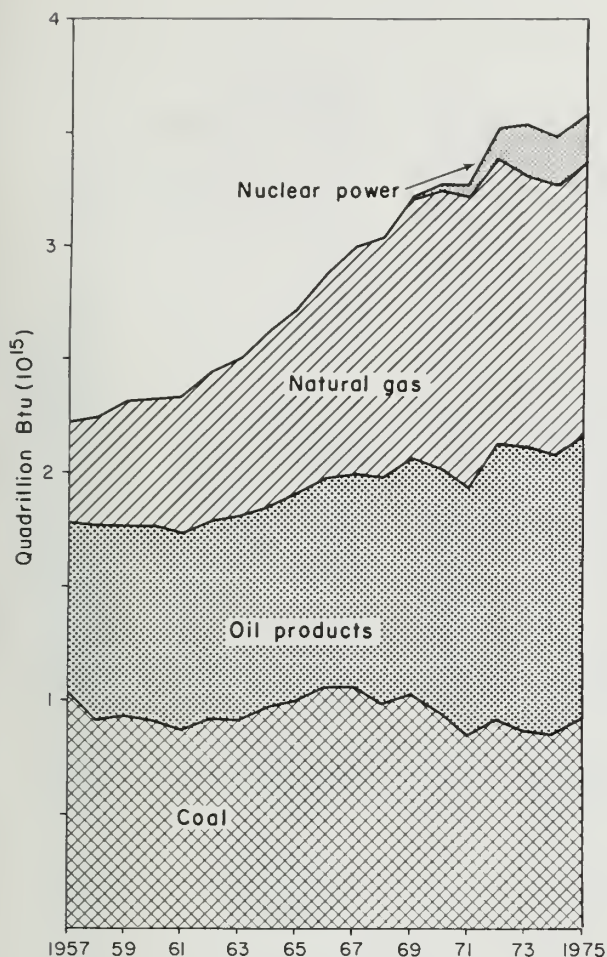


Fig. 1 - Total energy used in Illinois from 1957 through 1975, by type of fuel or energy source. Contribution of hydropower is too small to show. Although nuclear power has been used since 1960, its contribution prior to 1969 was too small to show.

whereas production by surface mining, while fluctuating annually, has been generally declining (fig. 3). In 1975 production from the 36 surface mines totaled 27.7 million tons, a 2.6 percent increase over 1974 surface mine production. In spite of this increase, total surface mine production was still approximately 30 percent below the peak production of 37.1 million tons of coal from 44 surface mines in 1967. The principal factors responsible for this steady decline in surface mine production in Illinois are the growing concern for reclamation of mined land and the depletion of shallow easily minable coal deposits.

The average production and average number of employees for both underground and surface mining are shown in table 9. Average output per underground mine in 1975 was about 1.5 million tons, an increase of 12.3 percent over the 1974 output. The average output per surface mine, however, declined by 8.8 percent from 842,767 tons in 1974 to 768,304 tons in 1975. While the average output per surface mine in Illinois has fluctuated from year to year in the last decade, the average output per underground mine has been steadily increasing (table 9). The average number of employees at both surface and underground mining operations increased in 1975 for the second year in a row.

In 1975, 28 coal mining companies operated in Illinois. Production from each company is shown in table 10. The four largest—Peabody Coal, Consolidation Coal, Freeman United Coal

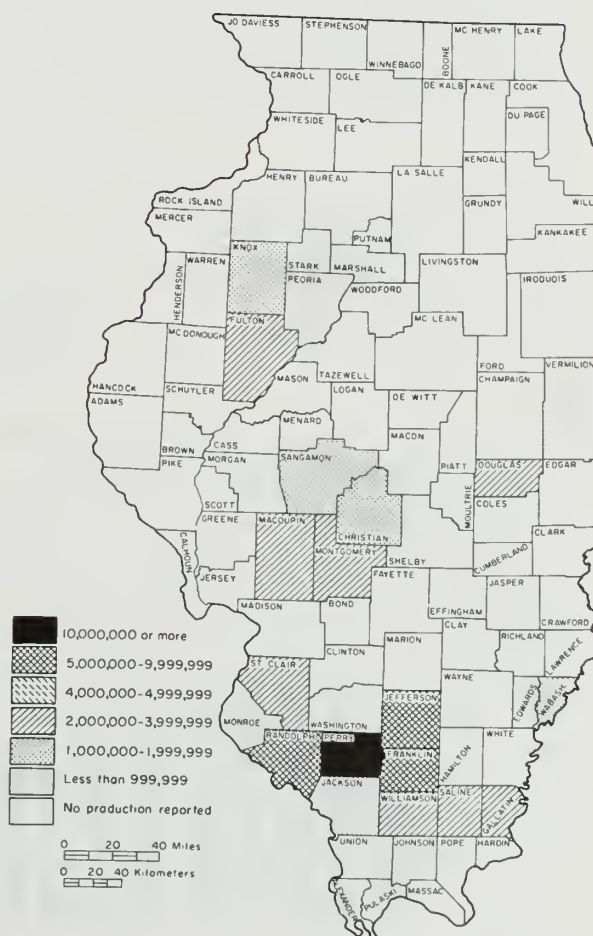


Fig. 2 - Illinois coal production by county, 1975.

TABLE 7—ILLINOIS COAL PRODUCTION, BY COUNTY, 1974 AND 1975

County	No. of mines	1975 Production ^a				Value ^b	No. of mines	1974 Production ^a				Value ^b
		Underground (tons)	Surface (tons)	Total (tons)				Underground (tons)	Surface (tons)	Total (tons)		
Christian	1 ^c	1,716,782	—	1,716,782	25,133,688		1 ^c	1,594,476	—	1,594,476	15,944,760	
Douglas	2	2,565,945	—	2,565,945	37,565,435		2	2,009,999	—	2,009,999	20,099,990	
Franklin	3	5,033,520	—	5,033,520	73,690,733		3	5,369,480	—	5,369,480	53,694,800	
Fulton	4	—	2,638,130	2,638,130	38,622,223		4	—	2,503,417	2,503,417	25,034,170	
Gallatin	2	1,510,853	494,723	2,005,576	29,361,633		3	1,447,624	274,486	1,722,110	17,221,100	
Jackson	2	—	54,584	54,584	799,110		1	—	66,324	66,324	663,240	
Jefferson	4	5,396,780	614,228	6,001,008	88,001,157		4	6,066,759	595,779	6,662,538	66,625,380	
Johnson	1	—	1,100	1,100	16,104		1	—	4,857	4,857	48,570	
Knox	1	—	1,333,554	1,333,554	19,523,230		1	—	1,017,046	1,017,046	10,170,460	
Macoupin	1	2,866,991	—	2,866,991	41,972,748		1	2,479,763	—	2,479,763	24,797,630	
Montgomery	1 ^c	2,726,020	—	2,726,020	39,908,933		1 ^c	1,938,663	—	1,938,663	19,386,630	
Peoria	2	—	844,298	844,298	12,360,523		3	—	1,148,292	1,148,292	11,482,920	
Perry	5 ^e	—	11,675,172	11,675,172	170,924,518		5 ^d	—	11,147,544	11,147,544	111,475,440	
Randolph	5 ^e	1,891,584	6,345,031	8,236,615	120,584,044		4 ^d	2,456,282	2,449,337	4,905,619	49,056,190	
St. Clair	2 ^e	2,847,815	620,033	3,467,848	50,769,295		2 ^e	1,874,300	4,599,887	6,474,187	64,741,870	
Saline	6	1,028,057	996,743	2,024,800	29,643,072		6 ^f	1,238,276	1,191,801	2,430,077	24,300,770	
Sangamon	— ^c	1,462,614	—	1,462,614	21,412,669		— ^c	2,239,251	—	2,239,251	22,392,510	
Stark	1	—	267,030	267,030	3,909,319		1	—	253,364	253,364	2,533,640	
Vermilion	1	—	15,416	15,416	225,690		1	5,470	—	5,470	54,700	
Wabash	1	1,266,342	—	1,266,342	18,539,247		1	743,536	—	743,536	7,435,360	
Will	—	—	—	—	—		1 ^g	—	140,222	140,222	1,402,220	
Williamson	12	1,566,780	1,758,894	3,325,674	48,678,867		9 ^f	1,640,233	1,576,172	3,216,405	32,164,050	
Total	57	31,880,083	27,658,936	59,539,019	871,651,238		55	31,104,112	26,968,528	58,072,640	580,726,400	
Total (%)		53.5	46.5					53.6	46.4			

^aProduction figures, Illinois State Department of Mines and Minerals, Annual Coal, Oil and Gas Report, 1974 and 1975.

^bValue calculated at an average of \$10.00 per ton for 1974 and \$14.64 for 1975.

^cOne mine operated at junction of Christian, Montgomery, and Sangamon Counties.

^dOne mine operated at junction of Randolph and Perry Counties.

^eTwo mines operated at junction of Randolph and St. Clair Counties.

^fOne mine operated at junction of Williamson and Saline Counties.

^gOne mine operated at junction of Grundy and Will Counties.

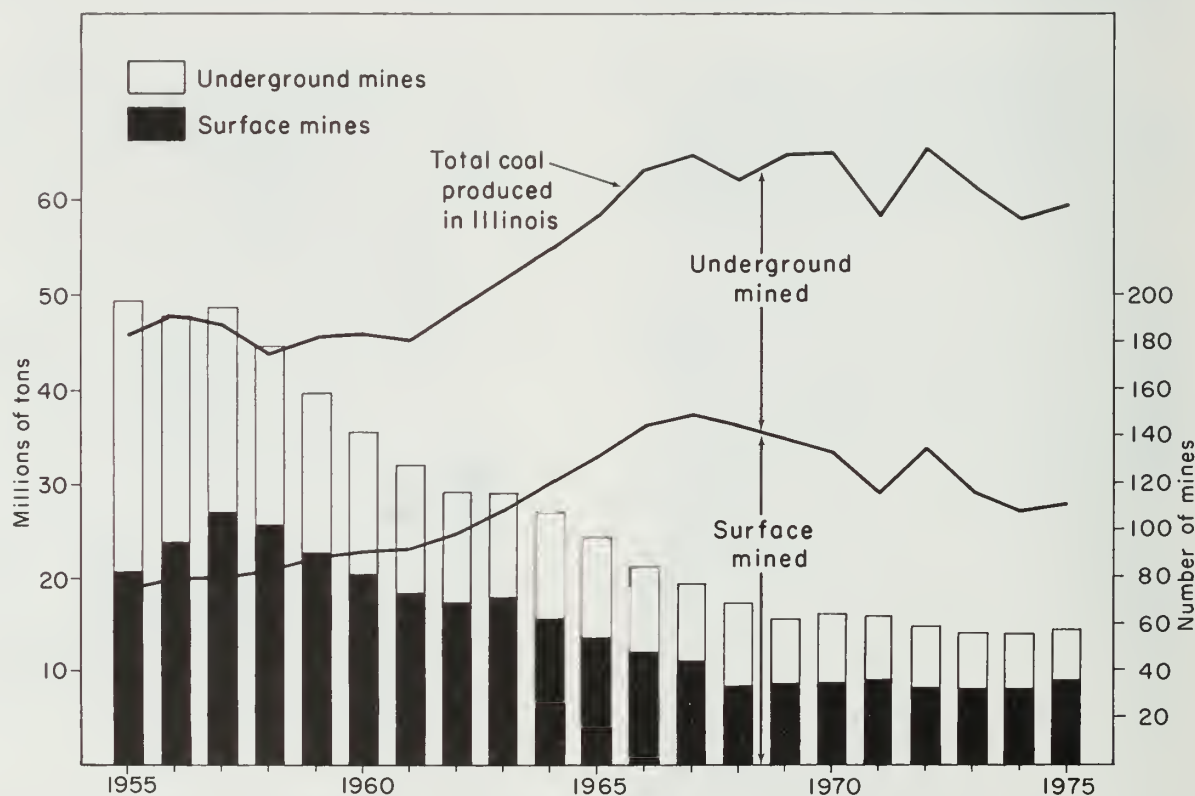


Fig. 3 - Trends in coal production in Illinois, 1955-1975.

TABLE 8—CUMULATIVE COAL PRODUCTION IN ILLINOIS
BY COUNTY, 1883-1975

County	Cumulative production ^a (tons)	Years active	Last year active
Adams	341,924	26	1969
Bond	7,355,569	57	1942
Brown	65,347	40	1963
Bureau	53,823,055	80	1964
Calhoun	96,247	27	1912
Cass	212,477	53	1941
Christian	298,195,535	91	1975
Clark	4,482	2	1955
Clay	801	1	1963
Clinton	38,656,325	79	1960
Coles	198,932	6	1888
Crawford	45,400	16	1961
Douglas	19,092,059	30	1975
Edgar	915,698	41	1952
Effingham	796	1	1890
Franklin	591,404,049	77	1975
Fulton	291,362,761	94	1975
Gallatin	23,261,712	91	1975
Greene	693,191	84	1967
Grundy	44,494,989	91	1973
Hamilton	22,097	16	1905
Hancock	771,281	72	1958
Hardin	40	1	1890
Henry	22,910,053	84	1965
Jackson	97,637,010	94	1975
Jasper	23,739	11	1939
Jefferson	95,958,039	72	1975
Jersey	120,350	59	1951
Johnson	302,808	60	1975
Kankakee	8,858,008	45	1969
Knox	61,386,037	92	1975
La Salle	65,547,638	79	1960
Livingston	10,111,437	80	1961
Logan	14,533,376	84	1968
Macon	11,000,468	65	1947
Macoupin	277,431,741	93	1975
McDonough	2,634,903	69	1951
McLean	5,544,139	47	1928
Madison	164,295,772	83	1964
Marion	39,247,722	82	1963
Marshall	12,516,141	70	1951
Menard	13,462,005	84	1965
Mercer	15,519,862	86	1973
Monroe	8,284	13	1941
Montgomery	134,432,946	94	1975
Morgan	190,787	64	1951
Moultrie	2,032,236	16	1924
Peoria	92,278,629	94	1975
Perry	297,514,537	94	1975
Pike	5,081	8	1942
Pope	23,747	14	1972
Putnam	10,071,893	29	1938
Randolph	134,261,901	94	1975
Richland	154	1	1890
Rock Island	3,846,169	67	1948
St. Clair	338,040,117	94	1975
Saline	245,398,879	94	1975
Sangamon	243,282,317	88	1975
Schuyler	7,747,691	84	1966
Scott	612,476	61	1942
Shelby	4,119,763	67	1950
Stark	9,160,830	85	1975
Tazewell	17,633,802	75	1956
Vermilion	164,972,389	94	1975
Wabash	2,246,417	39	1975
Warren	685,466	73	1954
Washington	18,165,386	88	1969
White	1,676,741	36	1940
Will	44,265,271	93	1974
Williamson	414,934,611	94	1975
Woodford	7,810,160	70	1951

TABLE 8—continued

County	Cumulative production ^a (tons)	Years active	Last year active
Total cumulative production 1882-1975			
4,485,474,695			
Estimated pro- duction, all counties, 1833-1881			
73,386,123			
Total cumulative production, 1833-1975			
4,558,860,818			

^aProduction figures: Illinois State Department of Mines and Minerals, Annual Coal, Oil and Gas Report 1975.

Mining, and Amax Coal—jointly accounted for 58.71 percent of the coal mined in the state.

Employment and wages

According to the Illinois Department of Mines and Minerals, 13,646 persons were working in Illinois coal mines in 1975—9,549 in underground mining operations and 4,097 in surface mine operations. In 1974, 12,467 persons were employed—8,118 in underground operations and 3,749 in surface operations.

The Illinois Department of Labor reported that the average hourly earnings for bituminous coal miners increased from \$6.98 in 1974 to \$7.68 in 1975 (table 4). The number of hours worked per week, however, remained the same as in 1974—41.5 hours.

Mine productivity

Average productivity of underground mines in Illinois, which had started to decline in 1970 when the Federal Health and Safety Act of December 1969 went into effect, further declined in 1975 to a recent low of 14.25 tons per man-day, according to U.S. Bureau of Mines data. This is about 35.7 percent below the 1969 level of 22.17 tons per man-day. In spite of this decline, the productivity level achieved by Illinois underground mines was largest in the nation of the major coal mining states.

For surface mining, the average productivity level achieved by Illinois mines was 24.19 tons per man-day—8.7 percent lower than the 1974 level.

TABLE 9—COAL MINES, MINING EMPLOYEES, AVERAGE PRODUCTION,
AND AVERAGE NUMBER OF EMPLOYEES, BY METHOD OF
MINING IN ILLINOIS, 1966-1975

Year	UNDERGROUND				SURFACE			
	No. of mines	No. of employees	Ave. output per mine (tons)	Ave. no. of employees per mine	No. of mines	No. of employees	Ave. output per mine (tons)	Ave. no. of employees per mine
1975	21	9,549	1,518,099	455	36	4,097	768,304	114
1974	23	8,718	1,352,353	379	32	3,749	842,767	117
1973	24	7,794	1,357,390	325	32	3,615	905,353	113
1972	26	7,870	1,219,838	303	33	3,367	1,024,412	102
1971	27	7,088	1,090,886	262	36	3,483	804,480	97
1970	29	6,785	1,090,192	233	35	3,429	950,530	98
1969	28	5,944	1,077,237	212	34	3,647	1,019,411	107
1968	36	6,028	724,568	167	33	3,510	1,092,535	106
1967	35	5,392	837,879	163	44	3,413	844,654	78
1966	36	5,566	753,671	155	48	3,428	751,678	71

Source: Illinois State Department of Mines and Minerals, Annual Coal, Oil and Gas Report, 1973.

TABLE 10—ILLINOIS COAL PRODUCTION, BY COMPANY, 1975

Rank	Company	No. of Mines		Production	Percentage of total production	No. of employees
		Underground	Surface			
1.	Peabody Coal	4	3	15,222,060	25.57	3,448
2.	Consolidation Coal	1	4	7,271,760	12.21	1,419
3.	Freeman United Coal Mining	3	2	6,510,458	10.93	2,016
4.	Amax Coal	1	3	5,956,578	10.00	967
5.	Old Ben Coal	3	0	5,033,520	8.45	1,505
6.	Southwestern Illinois Coal	0	2	4,986,729	8.38	457
7.	Zeigler Coal	4	0	4,037,054	6.78	1,263
8.	Monterey Coal	1	0	2,866,991	4.82	494
9.	Midland Coal	0	4	2,444,882	4.11	579
10.	Inland Steel	1	0	2,065,313	3.47	596
11.	Sahara Coal	2	1	1,858,785	3.12	584
12.	Robertson & Associates	0	1	614,228	1.03	81
13.	Jader Fuel	0	2	138,752	0.23	13
14.	Three States Trucking	0	2	123,582	0.21	60
15.	Harrisburg Coal	1	0	104,248	0.18	49
16.	Pryor Mtn. Construction & Mining	0	1	62,921	0.51	22
17.	Brown Bros. Excavating	0	1	50,891		10
18.	Williamson Coal	0	1	49,635		29
19.	E. & B. Coal	0	1	43,989		9
20.	Central States Mining	0	1	24,884		11
21.	Cold Water Coal	0	1	23,631		4
22.	Big Ridge Coal	0	1	17,811		9
23.	Lee Coal	0	1	15,416		7
24.	Valley Mining	0	1	6,000		5
25.	Houston Coal	0	1	3,678		3
26.	Illinois Coal, Oil & Gas	0	1	2,284	0.01	2
27.	Oxford Construction	0	1	1,839		2
28.	E. & L. Coal	0	1	1,100		2
Totals		21	37	59,539,019	100.00	13,646 ^a

^a9,522 underground and 4,124 surface.

Source: Illinois State Department of Mines and Minerals, Annual Coal, Oil and Gas Report, 1975.

The decline in surface mine productivity is due in part to the increase in average thickness of overburden that must be removed before the coal can be extracted and in part to the increase in personnel required to produce a ton of coal, in keeping with the rising demand for land reclamation (fig. 4).

Prices

The average price of Illinois coal, f.o.b. mine, in 1975 was \$14.64 per ton, 46.4 percent higher than the

1974 level. The average price, f.o.b. mine, of coal mined underground in Illinois in 1975 was \$16.30 per ton, \$3.58 higher than the price of surface mined coal.

Shipments

Illinois coal is shipped to various parts of the United States for use by electric utilities, for manufacturing coke, and for other industrial uses. Of the 59.9 million tons of Illinois coal shipped in 1975, includ-

ing mine stocks, 49.3 million tons was used by electric utilities, 4.3 million tons by coke plants manufacturing metallurgical coke, and 6.0 million tons by industrial plants. Approximately 330,000 tons was sold at retail prices (table 11). About 44.7 percent of the Illinois coal shipped to electric utilities was consumed within the state; the remainder was shipped to surrounding midwestern states and to the southeastern states. The market for Illinois utility coal in Missouri continued to grow, with consumption by this sector up 12.8 percent from the 1974 level. The market for Illinois utility coal is also growing in the southeastern states of Alabama, Mississippi, Georgia, Florida, and Tennessee, where electric power demands are growing rapidly. In Iowa and Michigan and within the state, however, Illinois coal has been losing its utility market to the low-sulfur coals from western states that meet the required standards for the emission of sulfur oxides.

More than 25 percent of the Illinois coal shipped for coking purposes was consumed in Illinois, and most of the remainder was shipped to nearby coke plants in northwestern Indiana. Since 1969, some coking coal from Illinois mines has been shipped to Mexico, with coking coal shipments there from Illinois totaling 233,000 tons in 1975.

Slightly less than 60 percent of the retail coal shipped from Illinois in 1975 was consumed within the state. The rest was shipped to nearby upper midwestern states, of which Iowa and Missouri were the largest consumers.

About 46 percent of the Illinois coal used for other industrial purposes in 1975 was consumed within the state. In order of amount consumed, the other important consumers of industrial coal from Illinois were Missouri, Iowa, Wisconsin, Michigan, and Indiana.

Transportation

In 1975 Illinois coal was shipped from the mine to the consuming sector by railroad, barge, truck, or conveyor

belt. At mine sites, 48.6 million tons of coal were loaded on railroad cars for shipment. Of this amount, 19.0 percent (9.2 million tons) was moved to docks for shipment by barge. Of the total amount of coal loaded at the mines, 21.2 million tons was shipped by unit train. The total amount of coal shipped by barge was 14.7 million tons. Coal shipped by truck totaled 1.2 million tons. The other 4.3 million tons was shipped to mine-mouth electric generating plants by conveyor belt.

Tonnages of Illinois coal handled by specific railroads in 1975 are:

RAILROADS	TONS
Illinois Central Gulf Railroad Co.	13,684,221
Missouri Pacific Lines	10,282,130
Burlington Northern, Inc.	6,228,928
Chicago & Northwestern Transportation Co.	3,627,662
Chicago and Eastern Illinois Railroad	2,872,404
Penn Central Transportation Co.	2,813,998
Others	9,047,469
Total Coal shipped by rail	48,556,812

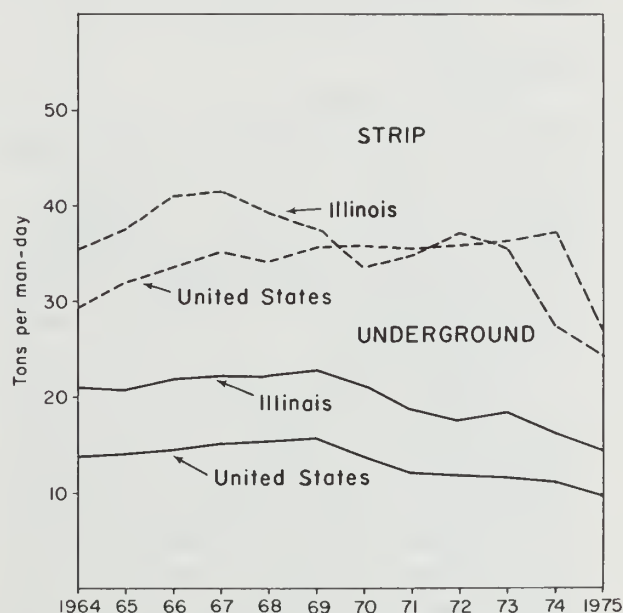


Fig. 4 - Trends in coal mine productivity, 1964-1975.

TABLE 11—ILLINOIS COAL SHIPMENTS, BY STATE DESTINATION
AND CONSUMING SECTOR, 1971-1975
(1000 tons)

Consuming sector	Wisconsin	Minnesota	Iowa	Michigan	Missouri	Indiana	Kentucky	Other states ^a	Exports ^b and miscellaneous	Illinois	Total
Electric utilities											
1971	5,206	2,258	3,043	424	5,934	2,409	3,803	2,271 ^c	4	22,204	47,556
1972	5,526	2,490	3,306	323	7,042	2,731 ^d	3,595	2,795 ^c	—	25,329	53,137
1973	4,599	1,574	2,714	680	8,014	2,167 ^d	2,923	2,892 ^c	51	24,091	49,705
1974	4,134	1,531	2,304	461	9,148	3,028 ^d	2,006	2,409	7	21,828	46,856
1975	4,595	1,679 ^d	2,290	334	10,496	3,081 ^d	1,982	2,821	—	22,006	49,284
Coke and gas plants											
1971	—	—	—	—	—	2,589	—	41	172	1,424	4,226
1972	—	—	—	—	—	2,810 ^d	—	—	182	1,288	4,280
1973	—	—	—	—	—	3,164 ^d	—	—	126	1,148	4,438
1974	—	—	—	—	—	3,361 ^d	—	—	237	1,054	4,652
1975	—	—	—	—	—	2,959 ^d	—	—	229	1,081	4,269
Retail dealers											
1971	50	26	17	18	43	19	—	—	3	723	899
1972	15	27	16	1	79	220	—	—	3	630	991
1973	2	17	14	—	168	43	—	—	2	417	663
1974	4	4	16	2	136	20	—	—	9	291	482
1975	1	—	7	—	100	14	—	—	12	196	330
All others											
1971	746	64	965	446	1,156	526	—	—	7	4,189	8,099
1972	793	59	1,130	318	1,553	492	—	—	14	4,084	8,443
1973	645	106	1,151	397	1,367	639	—	—	12	3,419	7,736
1974	556	18	867	473	1,464	513	—	—	29	3,193	7,113
1975	514	9 ^d	720	306	1,458	219	—	9	8	2,761	6,004
Totals											
1971	6,002	2,348	4,025	888	7,133	5,543	3,803	2,312	186	28,540	60,780
1972	6,334	2,576	4,452	642	8,674	6,253	3,595	2,795	199	31,331	66,851
1973	5,246	1,697	3,879	1,077	9,549	6,013	2,923	2,892	191	29,075	62,542
1974	4,694	1,553	3,187	936	10,748	6,922	2,006	2,409	282	26,366	59,103
1975	5,110	1,688	3,017	640	12,054	6,273	1,982	2,830	249	26,044	59,887

^aIncludes Alabama and Mississippi (1971-1975), Georgia and Florida (1971-1975), Tennessee (1971-1975), Ohio (1974), North Dakota (1974), Mississippi (1975).

^bPrimarily to Mexico.

^cIncludes minor amount of industrial and/or retail coal.

^dEstimated.

Source: U.S. Bureau of Mines Bituminous Coal and Lignite Distribution Quarterly, 1971-1975.

Of the 15 railroads handling Illinois coal in 1975, the top three handled 62.2 percent of the total; Illinois Central Gulf handled 28.2 percent.

Consumption

Coal consumed in Illinois in 1975 totaled 41.9 million tons (table 12), 6.9 percent more than the amount consumed in 1974. The coal-consuming sectors included electric utilities (83.1 percent), coke and gas plants (7.4 percent), retail dealers (1.2 percent), and industrial and other users (8.3 percent).

Of the total 41.9 million tons of coal used in Illinois in 1975, 26.0 million tons, or 62.1 percent, were shipped from mines within the state. The amount of coal shipped from mines in Illinois for use in Illinois is steadily declining, mainly due to the replacement of Illinois coal in the utility market by low-sulfur western coals, and in the industrial market by

low-sulfur Appalachian coal, natural gas, and fuel oil. In 1975, 28.3 percent of the total coal consumed in Illinois came from western states, including Colorado, Montana, New Mexico, Utah, and Wyoming. This was more than eleven times greater than the amount that had been shipped to Illinois from western states in 1970, before extensive development of the western coal fields began.

Although Indiana, Kentucky, and West Virginia shipped coal into Illinois for use by electric utilities (table 12), of the total 34.9 million tons consumed by Illinois electric utilities in 1975, about 33 percent came from western states. The delivered cost of western coal, on an equivalent heat basis, is considerably higher than the cost of Illinois coal. For example, the average price paid for coal by electric utilities in Illinois in 1975 was \$0.77 per million Btu for Wyoming coal and \$0.95

TABLE 12—SHIPMENT OF COAL FOR CONSUMPTION IN ILLINOIS,
BY STATE OF ORIGIN AND CONSUMING SECTOR, 1971-1975
(1000 tons)

Consuming sector	Illinois	Western Kentucky	Indiana	West Virginia and eastern Kentucky ^a	Ohio and eastern Pennsylvania	Northwestern and southwestern states ^b	Total coal consumed in Illinois
Electric utilities							
1971	22,204	1,431	604 ^c	43	—	3,648 ^c	27,930
1972	25,329	1,586	393	200	—	4,786	32,294
1973	24,091	1,662	341 ^c	142	—	6,229	32,465
1974	21,828	1,115	367	96	—	7,431	30,837
1975	22,006	844	371	174	—	11,458	34,853
Coke & gas plants							
1971	1,424	—	50 ^c	1,847	26	— ^c	3,347
1972	1,288	—	—	1,955	—	—	3,243
1973	1,148	—	—	1,820	—	—	2,968
1974	1,054	—	—	2,022	24	—	3,100
1975	1,081	—	—	1,778	38	197	3,094
Retail dealers							
1971	723	59	1 ^c	1,082	4	2 ^{cd}	1,871
1972	630	13	9	759	2	2 ^d	1,415
1973	417	6	—	511	—	—	934
1974	291	3	—	419	—	59 ^d	772
1975	196	2	—	253	—	56 ^d	507
All others							
1971	4,189	92	170 ^c	689	1	— ^c	5,141
1972	4,084	118	51	823	—	—	5,076
1973	3,419	111	84 ^c	647	—	—	4,261
1974	3,193	151	126	597	—	278	4,345
1975	2,761	55	15	484	—	179 ^d	3,494
Total							
1971	28,540	1,582	825	3,661	31	3,650	38,289
1972	31,331	1,717	453	3,737	2	4,788	42,028
1973	29,075	1,779	425	3,120	—	6,229	40,628
1974	26,366	1,269	493	3,134	24	7,768	39,054
1975	26,044	901	386	2,689	38	11,890	41,948

^aIncludes tonnages from Virginia and northeastern Tennessee, and North Carolina.

^bMontana, Washington, Wyoming, Idaho, Arkansas, Oklahoma, southern Colorado, Utah, and New Mexico.

^cEstimated.

^dIncludes tonnages from District 15 (Kansas, Missouri, and northeastern Oklahoma).

Source: U.S. Bureau of Mines, Bituminous Coal and Lignite Distribution, Calendar Years 1971-1975.

per million Btu for Montana coal as compared to \$0.66 per million Btu for Illinois coal. Nevertheless, the use of western coal by Illinois electric utilities is expected to increase until a commercial technology to remove sulfur from Illinois coal is better developed.

Nearly 35 percent of the coal used at coke and gas plants in Illinois in 1975 came from Illinois mines; 57.5 percent came from mines in West Virginia and eastern Kentucky; and 1.2 percent from Ohio and eastern Pennsylvania.

The amount of coal used for industrial and other purposes in Illinois continued to decline (table 12): the 3.5 million tons in 1975 were 17.4 percent less than the amount consumed in 1974. The principal regions, excluding Illinois, that supplied coal for Illinois industrial use were West Virginia and eastern Kentucky and the western states.

Illinois mines supplied 38.7 percent of the coal sold by Illinois retail dealers. West Virginia and Kentucky mines supplied 50.3 percent; the western states supplied the remainder.

Crude oil

Production

Illinois crude oil production in 1975 from 23,373 wells totaled 26.1 million barrels—5.4 percent less than in 1974. At an average unit value of \$10.48 per barrel, the production was valued at \$273 million (table 13). Of the 26.1 million barrels produced in 1975, 17.6 million barrels were recovered by waterflooding, a secondary recovery method.

Forty-two counties produced crude oil in 1975, with the following contributing 75.6 percent of the oil production in 1975:

TABLE 13—CUMULATIVE CRUDE OIL PRODUCTION IN ILLINOIS, BY COUNTY, 1888-1975

County	Cumulative production, 1888-1975 ^a (1000 bbl)	1975		
		Production ^b (1000 bbl)	Percentage of total Illinois production	Value ^c (in thousands)
Adams	185	1	0.0	13
Bond	7,247	40	0.2	415
Brown	233	2	0.0	24
Champaign	7	--	--	--
Christian	25,092	256	1.0	2,679
Clark-				
Cumberland	90,077	429	1.6	4,495
Clay	130,900	1,232	4.7	12,914
Clinton	83,460	468	1.8	4,906
Coles	22,809	153	0.6	1,607
Crawford	227,502	1,045	4.0	10,950
De Witt	2,732	138	0.5	1,449
Douglas	3,578	12	0.0	123
Edgar	3,585	105	0.4	1,098
Edwards	45,572	454	1.7	4,758
Effingham	15,740	229	0.9	2,396
Fayette	387,185	2,523	9.7	26,442
Franklin	70,384	448	1.7	4,694
Gallatin	49,639	493	1.9	5,169
Hamilton	131,358	649	2.5	6,803
Jackson	2	2	--	19
Jasper	50,291	614	2.4	6,430
Jefferson	81,431	722	2.8	7,565
Lawrence	386,239	3,376	13.0	35,376
Macon	904	8	0.0	79
Macoupin	246	7	0.0	78
Madison	17,186	94	0.4	985
Marion	403,139	2,903	11.1	30,422
McDonough-				
Hancock ^b	5,447	34	0.1	354
Monroe	2	--	--	--
Montgomery	118	1	0.0	8
Moultrie	97	2	0.0	22
Perry	778	22	0.1	228
Randolph	4,346	61	0.2	637
Richland	99,804	1,030	4.0	10,796
St. Clair	3,330	35	0.1	363
Saline	20,941	200	0.8	2,091
Sangamon	2,910	194	0.7	2,034
Schuyler	1	--	--	--
Shelby	1,620	39	0.2	412
Wabash	106,457	1,075	4.1	11,266
Washington	29,795	616	2.4	6,451
Wayne	236,502	2,752	10.6	28,839
White	276,294	3,027	11.6	31,719
Williamson	1,875	153	0.6	1,605
Other ^d	2,941	426	1.6	4,464
Total ^d	3,029,978	26,067	100.0	273,179

^a1975 production includes 426 thousand barrels which could not be assigned to individual fields or counties.

^bNo oil production reported for Hancock County in 1971-1975.

^cValue calculated at average price of \$10.48 per barrel.

^dDoes not add due to independent rounding.

Source: Illinois State Geological Survey Oil and Gas Section

COUNTY	(%)	COUNTY	(%)
Lawrence	13.0	Clay	4.7
White	11.6	Wabash	4.1
Marion	11.1	Crawford	4.0
Wayne	10.6	Richland	4.0
Fayette	9.7	Jefferson	2.8

In 1975, although 370 oil fields were producing in Illinois, more than 67 percent of the production came from the 10 fields listed in table 14. The southeastern Illinois area, which contains a number of fields, accounted for more than 18 percent of the state's production. The four

largest fields—Southeastern Illinois, Clay City Consolidated, Salem Consolidated, and Loudon—accounted for 51.2 percent of the crude oil production in Illinois in 1975.

Trends in Illinois oil production are shown in figure 5. The highest production was achieved in 1940, with a steady decline from 1941 through 1953. Primary production remain stable from 1947 through 1949, but then declined until the introduction of the hydrofrac method of well completion in 1954, which, coupled with greatly increased activity in waterflood development, briefly reversed a downward trend in production. When major emphasis shifted to waterflood development, nearly stable production was maintained from 1955 through 1963. Since that time both waterflood and primary production rates have been declining. The extent of the

TABLE 14—ILLINOIS CRUDE OIL PRODUCTION, BY MAJOR FIELD, 1975

Field	County	Crude oil production (100D bbl)	Percentage of state total
Southeastern Illinois	Wabash Lawrence Crawford Clark Cumberland Jasper	} 4,786.1	18.4
Clay City Consolidated	Clay Wayne Richland Jasper		
Salem Consolidated	Marion Jefferson		
Louden	Fayette Effingham		
New Harmony Consolidated	White Wabash Edwards		
Sailor Springs Consolidated	Clay Jasper Effingham		
Roland Consolidated	White Gallatin	} 578.5	2.2
Dale Consolidated	Franklin Hamilton Saline		
Johnsonville Consolidated	Wayne	444.0	1.7
Phillipstown Consolidated	White Edwards	} 509.5	1.9
Subtotal			
Others		8,522.9	32.7
Total		26,067.0	100.0

Source: Illinois State Geological Survey Oil and Gas Section.

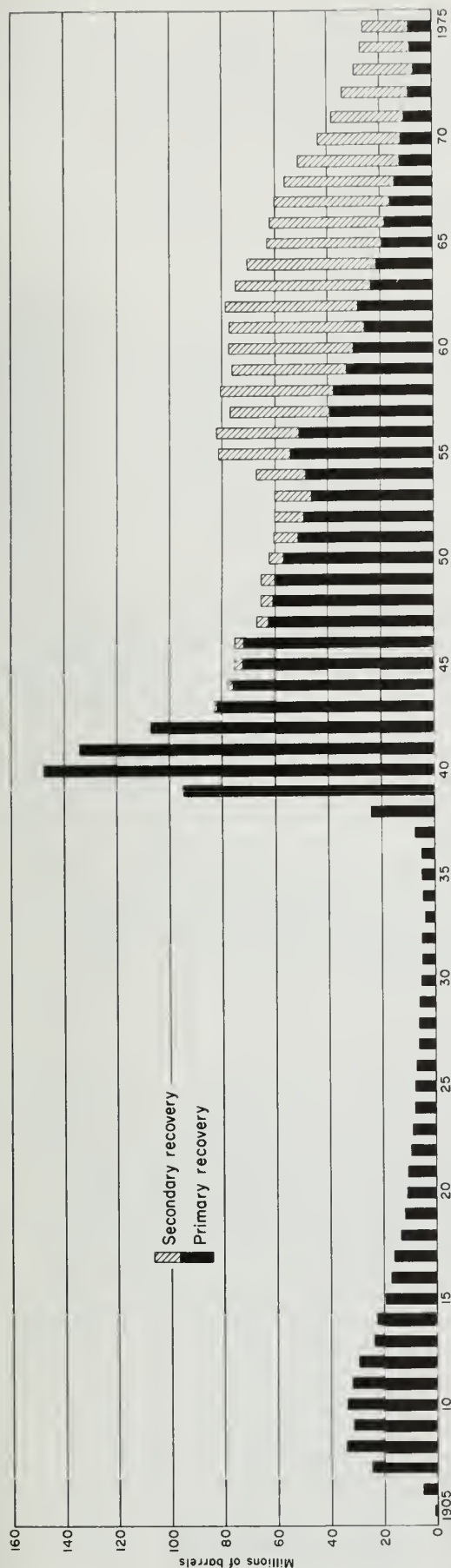


Fig. 5 - Annual crude oil production in Illinois, 1905-1975.

depletion of reserves can be seen by comparing the January 1956 reserve figure of 701,300,000 barrels with the January 1976 figure of 160,986,000 barrels.

Refineries

According to the U.S. Bureau of Mines, 11 refineries were operating in Illinois as of January 1, 1976, with a total capacity of 1,191,800 barrels per calendar day—1.5 percent higher than the capacity a year earlier.

During 1975, 357.9 million barrels of crude oil were received at Illinois refineries, including 252.9 million barrels from other states and 90.2 million barrels from foreign countries; the rest was of Illinois origin.

Substitute natural gas plants

The only substitute natural gas (SNG) plant operating in Illinois during 1975 was the Northern Illinois Gas Company's plant near Morris in Grundy County. In early 1976 another SNG plant operated by People's Gas, Light and Coke Company opened near Elwood, in Will County. These two plants have a combined daily capacity of approximately 320 million cubic feet. As a result of the Federal Energy Administration's restrictive policy with regard to allocating petroleum feedstocks for SNG production, many SNG plants that were in the planning stages around the country, including a large plant near Bement in Piatt County, have been indefinitely postponed or cancelled. Northern Illinois Gas Company's plans to increase its plant by 50 percent have been postponed for the same reason.

Consumption

Consumption of major petroleum products in Illinois from 1971 through 1975 is shown in table 15. In 1975, gasoline consumption in Illinois increased by 1.3 percent over 1974 consumption and represented 4.88 percent of the total amount of gasoline consumed in the United States.

Consumption of distillate fuel oil decreased 2.5 percent, and use of residual fuel oil decreased 1.7 percent.

TABLE 15—CONSUMPTION OF MAJOR PETROLEUM PRODUCTS IN ILLINOIS, 1971-1975

Product	Unit	1975	1974	1973	1972	1971
Gasoline (excluding naptha)	thousand bbl	121,127 ^a	119,637 ^a	120,558 ^b	115,526 ^b	109,818 ^b
Kerosine ^c	thousand bbl	2,722	3,274	4,485	4,317	3,234
Distillate fuel oil ^c	thousand bbl	52,603	53,950	54,288	55,276	49,467
Residual fuel oil ^c	thousand bbl	28,048	28,521	28,795	29,581	22,835
Liquefied gases ^d	thousand gal					
Propane		800,697	724,708	650,115	644,123	587,372
Butane		10,344	9,413	9,597	7,176	7,602
Butane-propane mix		189	319	801	1,546	1,101
Total		811,230	734,440	660,513	652,845	596,075
Asphalt ^e	tons	1,832,615	1,792,502	2,096,879 ^f	1,565,675	1,910,674
Road oil ^e	tons	72,846	179,891	236,972	210,660	236,917

^aBasic Petroleum Data Book, American Petroleum Institute.

^bAmerican Petroleum Institute Weekly Statistical Bulletins.

^cU.S. Bureau of Mines Sales of Fuel Oil and Kerosine, Annual Statements, 1971-1975.

^dU.S. Bureau of Mines Sales of Liquefied Petroleum Gases and Ethane, Annual Statements, 1971-1975.

^eU.S. Bureau of Mines Sales of Asphalt, Annual Statements, 1971-1975.

^fRevised.

In Illinois during 1975, consumption of kerosine decreased by 16.9 percent and consumption of liquefied gas increased by 10.5 percent. The use of asphalt products in the state increased by 2.2 percent, and road oil consumption declined by 59.5 percent in 1975.

Natural Gas

Production

Natural gas is produced in Illinois from gas wells and oil wells; however, none of the gas from oil wells is marketed. The amount of gas produced from oil wells, too small to be shown in table 16, either is used for lease fuel in oil-producing operations or is flared. In 1975, 1,440 million cubic feet of gas was marketed (table 16) at an average value of \$0.70 per thousand cubic feet. The value of the marketed gas is calculated to be \$1,008,000.

The amount of natural gas marketed from Illinois fields in 1975 increased by 0.28 percent over the 1974 level, in keeping with the general increase in marketed natural gas from Illinois fields over the last few years. In 1970, for example, only 198 million cubic feet was marketed, as compared to more than 7 times that amount in 1975. The sharp rise in production results mainly from (1) new production from the Devonian formations of the

Mattoon field beginning in 1972 and from the Pennsylvanian formations of the Stubblefield South field beginning in 1975 (table 17), and (2) increases in the wellhead prices.

At present, natural gas is being recovered in five counties—Coles, Bond, Saline, Williamson, and Gallatin (table 17). The leading fields include Mattoon in Coles County (82.3 percent of the total production), Stubblefield South in Bond County, Harco East and Raleigh South in Saline County.

Consumption

In 1975, consumption of natural gas in Illinois (1,107.9 billion cubic feet) decreased 4.8 percent from the 1974 level of 1,163.2 billion cubic feet (table 18). The decline of 10.9 percent in consumption from the 1971 level of 1,242.8 billion cubic feet reflects the decreasing supply and increasing price of natural gas rather than a diminishing demand for the commodity (fig. 6).

In 1975, of the total 1,107.9 billion cubic feet of gas consumed in Illinois, 97.6 percent (1,080.8 billion cubic feet) was delivered to consumers and the remaining 2.4 percent was lost in extraction, used for pipeline fuel, or burned as lease

plant fuel. The consumption of natural gas by consumer class is shown in figure 6. The only two sectors with increased consumption were the residential (up 3.7 percent) and the commercial (up 0.5 percent).

Industrial and construction materials

Clays

Production

The types of clay mined in Illinois include common clay, refractory or fire clay, and absorbent clay (also referred to as fuller's earth). In 1975, a total of 1,366,136 short tons of clay, excluding fuller's earth, was produced in Illinois. Of

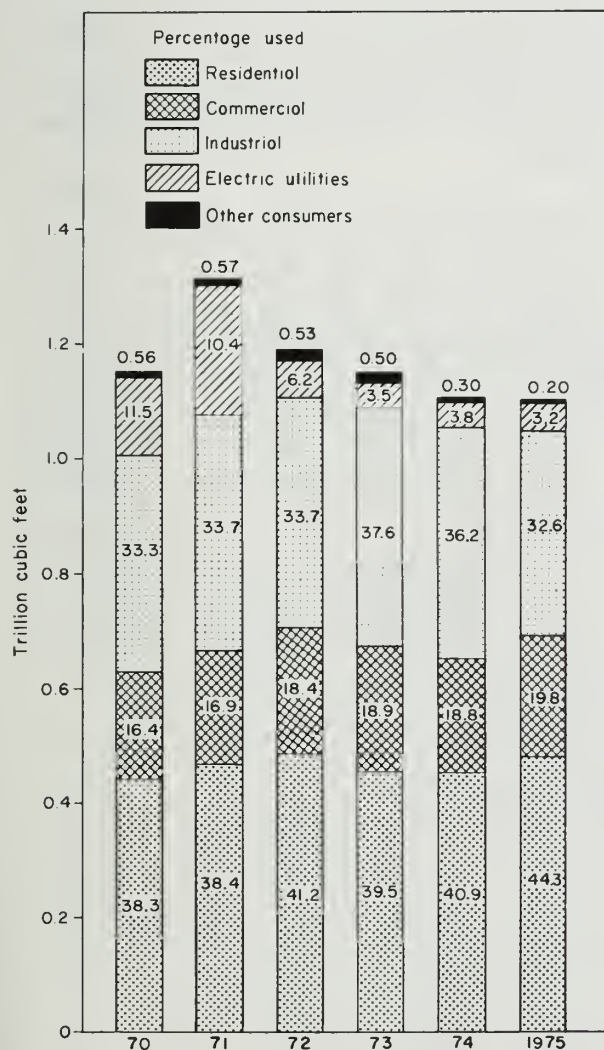


Fig. 6 - Consumption of natural gas in Illinois, 1970-1975.

TABLE 16—PRODUCTION OF NATURAL GAS IN ILLINOIS, 1971-1975

Year	Production (million cu ft)				
	Withdrawals		Total	Disposition	
	From gas wells	From oil wells		Marketed	Flared
1971	498	3,997	4,495	498	3,997
1972	1,194	1,806	3,000	1,194	1,806
1973	1,638	-- ^a	1,638	1,638	--
1974	1,436	-- ^a	1,436	1,436	--
1975	1,440	-- ^a	1,440	1,440	--

^aNot reported separately; included under gross withdrawals from gas wells.

Source: U.S. Bureau of Mines, Minerals Yearbooks, 1971-1975.

TABLE 17—PRODUCTION OF NATURAL GAS IN ILLINOIS BY FIELD AND COUNTY, 1974 AND 1975

Gas field	County	Production (million cu ft)		Percentage of change 1974-1975
		1975	1974	
Eldorado Consol	Saline	11.7	—	—
Eldorado East	Saline	12.4	13.2	-6.1
	Gallatin	—	—	—
Harco East	Saline	54.4	38.3	+42.0
Herold Consol	Gallatin	4.8	—	—
Johnson City East	Williamson	7.6	3.4	+123.5
Mattoon	Coles	1,185.2	1,372.7	-13.7
Omaha	Gallatin	—	4.1	—
Raleigh	Saline	17.7	4.1	+331.7
Raleigh South	Saline	34.6	—	—
Stirtz	Williamson	11.2	0.2	+5,500.0
Stubblefield South	Bond	100.0	—	—
Total		1,439.6	1,436.0	+0.3

Source: Illinois State Geological Survey Oil and Gas Section.

TABLE 18—CONSUMPTION OF NATURAL GAS IN ILLINOIS, BY CONSUMER CLASS, 1974 AND 1975

Consumer class	1975		1974	
	Quantity (million cu ft)	Quantity (million cu ft)	Percentage of change	Percentage of total consumption
Residential	478,602	461,746	+ 3.7	43.2
Commercial	214,028	212,922	+ 0.5	19.3
Industrial	352,291	409,573	- 14.0	31.8
Electric utilities	34,176	42,792	- 20.1	3.1
Other consumers ^a	1,690	3,192	- 47.1	0.2
Total delivered to consumers	1,080,787	1,130,225	- 5.5	97.6
Other uses ^b	27,113	32,990	- 17.8	2.4
Total consumption	1,107,900	1,163,215	- 4.8	100.0

^aIncludes municipalities and public authorities that use natural gas for institutional heating, street lighting, and other purposes.

^bIncludes lease and plant fuel, pipeline fuel, and extraction loss.

Source: U.S. Bureau of Mines.

this total, 95.9 percent was common clay and the rest was refractory. In addition, some absorbent clay was produced in Illinois in 1975. At an average unit value of \$2.38 per ton, the common and refractory clays produced in Illinois were valued at \$3.2 million, \$0.5 million lower than the value reported for 1974.

Clays were mined in 12 Illinois counties, with the largest amount, 954,704 tons (65.9 percent), mined in La Salle County. Thirteen companies with 16 operations in eight counties produced common clay and shale. In 1975 as in 1974, three companies in three counties mined refractory clay. Pulaski County, which has two mining companies, continued to be the only county to produce absorbent clay.

Trends in Illinois clay production are shown in figure 7. Production declined sharply in 1969 and 1970, rose from 1971 through 1973, and in 1975 plunged to the lowest level in more than two decades.

Consumption and uses

The common clays and shales mined in Illinois are used principally in the manufacture of brick, sewer pipe, drain tile, cement, and lightweight aggregates. Of the 1.3 million tons

of common clays produced in 1975, 20.7 percent was used in the production of common and face brick, 6.6 percent in the manufacture of sewer pipe and drain tile, and most of the rest in the production of cement.

In 1975, production of clays for common and face brick decreased 40.9 percent from the 1974 production level.

In 1975 refractory clay produced in Illinois, used in manufacture of refractory brick, stoneware, and other clay products, continued in its general decline from the recent production peak of 246,740 tons in 1968, to 56,635 tons, or 77.0 percent below the 1968 level.

Illinois production of absorbent clay, which has been declining for the last six years, increased slightly in 1975. Most of the absorbent clay produced in Illinois is used in animal litter, oil and grease absorbents, or fertilizers and related products.

Fluorspar

Production

In 1975 Illinois continued to be the leading fluorspar-producing state, contributing 71.4 percent of the nation's total finished fluorspar

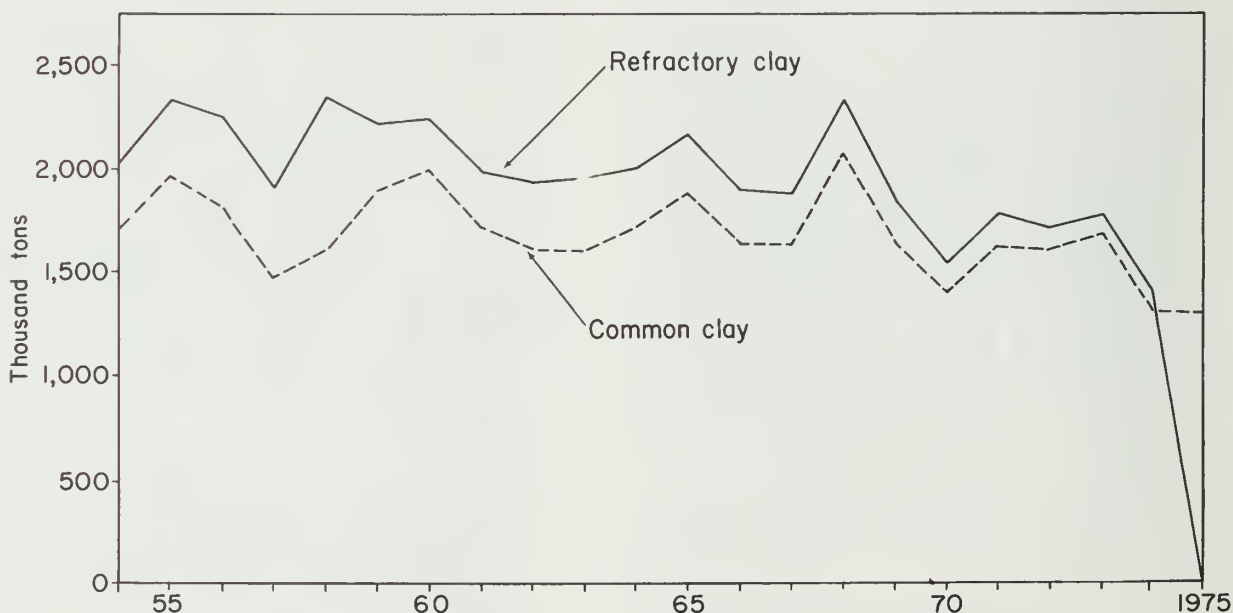


Fig. 7 - Trends in Illinois clay production, 1954-1975.

shipments. Illinois produced 98,642 tons and shipped 99,898 tons of finished fluorspar during 1975. Of the total shipped, 50,479 tons were of acid grade (more than 97 percent calcium fluoride) and 49,419 tons were of metallurgical grade (less than 97 percent calcium fluoride) (table 19). Total fluorspar shipments from Illinois, however, decreased by 35 percent in 1975, due in large part to labor strikes which closed the mines and plants of the Ozark-Mahoning Company near Rosiclare for three months.

All the fluorspar mined in Illinois in 1975 came from Hardin and Pope Counties. Mining operations were carried out by the Ozark-Mahoning Company, Hastie Mining Company, American Minerals, Inc., and the fluorspar division of Allied Chemical Corp., which purchased Minerva Oil Company's fluorspar operations in Illinois and Kentucky on March 7, 1975.

Shipments

In 1975, Illinois producers shipped 5,801 tons of fluorspar, lead, and zinc ore to foreign countries and 104,733 tons to other states. The latter accounted for 86.5 percent of the total Illinois fluorspar, lead, and zinc shipments. The remainder—10,607 tons of ore—was shipped to Illinois consumers.

Consumption

The reported consumption of fluorspar in the United States decreased from 1,524,532 tons in

1974 to 1,244,938 tons in 1975. The apparent U.S. consumption (production + imports - exports + change in stocks) in 1975 totaled 1,300,096—considerably lower (by 128,579 tons) than the apparent consumption in 1974.

In 1975, Illinois consumed 46,525 tons of fluorspar, or about 3.74 percent of the total U.S. consumption. Both Illinois consumption as a percentage of the total United States consumption and Illinois shipments as a percentage of the United States shipments decreased in 1975 (table 19). The decline in Illinois consumption of fluorspar was attributed to the decreased manufacture of hydrofluoric acid for the chemical industries as well as to the decline in production of raw steel. In 1975, Illinois raw steel production totaled 9.6 million tons—26.2 percent lower than the 1974 level. The need for fluorspar, used as a flux in the steel industry, concurrently declined.

Sand and Gravel

Production

Sand and gravel deposits are widely distributed throughout Illinois. The principal sources of commercial sand and gravel are glacial deposits, chiefly valley trains and outwash plains. In 1975, Illinois produced 16.1 million tons of sand (excluding industrial sand), 15.3 million tons of gravel, and 3.1 million tons of undifferentiated sand

TABLE 19—FLUORSPAR SHIPMENTS AND CONSUMPTION, ILLINOIS AND UNITED STATES, 1966-1975

Year	Shipments (tons)				Illinois shipments as percentage of U.S. shipments	Consumption (tons)		
	Acid grade	Illinois Metallurgical grade	Total	United States total		Illinois	United States ^a	Illinois consumption as percentage of U.S. consumption
1966	103,568	72,607	176,175	253,068	69.6	56,772	1,065,124	5.33
1967	120,388	89,819	210,207	295,643	71.1	60,521	1,091,158	5.55
1968	87,152	101,173	188,325	252,411	74.6	64,521	1,243,414	5.19
1969	47,776	40,704	88,480	182,567	48.5	78,727	1,356,624	5.80
1970	86,729	61,479	148,208	269,221	55.1	89,065	1,372,404	6.49
1971	72,514	65,537	138,051	272,071	50.7	89,971	1,344,742	6.69
1972	75,188	57,217	132,405	250,347	52.9	67,428	1,352,149	4.99
1973	93,062	72,751	165,813	248,601	66.7	86,715	1,351,705	6.42
1974	69,204	84,494	153,698	201,116	76.4	75,115	1,524,532	4.93
1975	50,479	49,419	99,898	139,913	71.4	46,525	1,244,938	3.74

^aFluorspar consumed includes domestic and foreign material.
Source: U.S. Bureau of Mines.

and gravel. At a value of \$2.14 per ton, Illinois sand and gravel production was valued at \$83.5 million, an increase of 21.8 percent in value from the 1974 levels despite a decrease in tonnage.

The quantity of industrial sand produced in Illinois during 1975—reported from La Salle and Ogle Counties—was 4.4 million tons, more than twice the 1974 production. At a unit value of \$5.35, the 1975 value was \$25.6 million.

Sand and gravel was produced by 59 Illinois counties in 1975 (table 20 and fig. 8). The number of operations producing sand and gravel continued to decline, with 182 companies running 204 operations, and with total production of sand and gravel declining by 14.8 percent (fig. 9). Within the last ten to twelve years the number of plants producing more than 300,000 tons of sand and gravel has increased from 25 to 39, making use of certain economies of scale. In table 21, sand and gravel production in 1974 and 1975 is shown by size of operation.

Transportation

The shipment of sand and gravel is restricted largely to areas within a radius of less than 50 miles from the pit site. In 1975, 82.6 percent of total shipments were made by truck. Shipment by barge continued to increase markedly from 5.5 percent in 1974 to 7.5 percent of the total shipments in 1975, while rail shipments also substantially increased from 2.7 percent to 8.9 percent of total shipments in 1975 (table 20).

Consumption and uses

Common sand and gravel produced in Illinois are used primarily for construction aggregate. Of the 34.6 million tons of common sand and gravel produced in 1975, 74.2 percent was used in commercial operations and 25.8 percent in government and contractor operations (table 22). Sand and gravel used in commercial operations decreased by 25.5 percent

from the 1974 level, while that used by government and contractor operations increased 45.1 percent. A total of 12.2 million tons or 35.2 percent was used for building construction; 17.8 million tons, 51.4 percent, for paving; and 4.3 million tons, 12.4 percent, as fill (table 22).

Industrial sand produced in 1975 was sold in unground form for use in glass manufacturing; as molding sand, blasting sand, grinding and polishing sand; as engine sand for filtration; and as sand for hydrofracturing in oil wells. Ground sand was sold for use in chemicals, abrasives, enamels, glass, pottery, porcelain, and tile, and for fillers and foundry purposes.

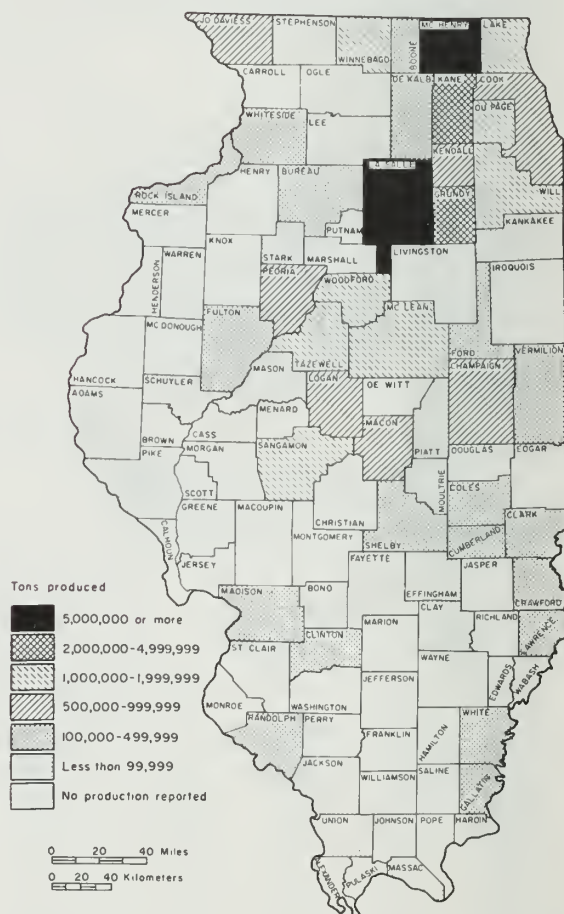


Fig. 8 - Illinois sand and gravel production by county, 1975. Source: U.S. Bureau of Mines.

TABLE 20—SAND AND GRAVEL PRODUCED AND MODE OF TRANSPORTATION,
BY COUNTY, 1975

County	Number of companies	Number of operations	Quantity (1000 tons)					Value (\$1000)	Mode of Shipment ^a			
			Sand	Gravel	Industrial sand	Undiffer-entiated	Total produced		Truck	Rail	Barge	Undis-tributed
Adams	1	1	W ^b	—	—	—	W	W	W	—	—	—
Alexander	1	1	—	—	—	26	26	37	26	—	—	—
Bond	2	2	W	W	—	W	W	W	W	—	—	—
Boone	4	4	118	81	—	W	199 ^c	318	199 ^c	—	—	—
Bureau	7	7	105	306	—	W	411 ^c	946	411 ^c	—	—	—
Cass	1	1	—	11	—	—	11	11	11	—	—	—
Champaign	5	6	514	109	—	129	752 ^c	1,582	730	—	—	22
Clark	3	3	72	221	—	W	293 ^c	551	293 ^c	—	—	—
Clay	1	1	W	W	—	—	W	W	W	—	—	—
Clinton	3	3	W	—	—	W	261	432	261	—	—	—
Coles	2	2	W	W	—	W	W	W	W	—	—	—
Cook	3	3	305	471	—	W	776 ^c	1,532	776 ^c	—	—	—
Crawford	1	1	W	W	—	W	W	W	W	—	—	—
Cumberland	2	2	W	W	—	W	W	W	W	—	—	—
DeKalb	4	4	197	33	—	W	230 ^c	446	199	—	—	W
Du Page	3	4	W	925	—	W	1,137	2,441	1,137	—	—	—
Effingham	1	1	—	—	—	W	W	W	W	—	—	—
Fayette	1	1	W	W	—	W	W	W	W	—	—	—
Ford	2	4	W	W	—	W	W	W	W	—	—	W
Fulton	4	4	W	73	—	W	256	331	256	—	—	—
Gallatin	1	1	W	W	—	—	W	W	W	—	—	—
Grundy	1	1	W	—	—	—	W	W	W	—	W	—
Jackson	1	1	W	—	—	—	W	W	W	—	—	—
Jo Daviess	2	2	W	W	—	W	W	W	W	—	—	—
Kane	11	15	1,461	2,588	—	343	4,392	6,758	W	—	W	—
Kankakee	3	3	—	—	—	28	28	22	28	—	—	—
Kendall	4	5	477	368	—	W	845 ^c	1,074	845 ^c	—	—	—
Lake	8	9	W	624	—	W	1,224	1,409	1,224	—	—	—
La Salle	11	12	W	342	4,440	W	5,107	24,724	W	W	—	W
Lawrence	3	3	W	W	—	W	469	720	W	—	—	—
Lee	1	1	W	W	—	—	W	W	W	—	—	—
Logan	3	4	W	257	—	W	521	970	521	—	—	—
McHenry	13	15	2,452	2,718	—	508	5,678	8,691	4,965	W	W	—
McLean	4	5	W	544	—	W	1,072	2,505	1,072	—	—	—
Macon	3	3	506	122	—	63	691	1,277	691	—	—	—
Madison	3	3	W	—	—	W	354	590	354	—	—	—
Mason	1	1	W	—	—	—	W	W	W	—	—	—
Massac	1	1	—	—	—	W	W	W	W	—	—	—
Moultrie	1	1	—	—	—	W	W	W	W	—	—	—
Ogle	1	2	W	W	— ^d	—	W	W	W	—	—	—
Peoria	3	3	W	W	—	W	912	1,433	912	—	—	—
Piatt	1	1	—	—	—	W	W	W	W	—	—	—
Pike	1	1	W	W	—	—	W	W	W	—	—	—
Randolph	1	1	W	—	—	—	W	W	W	—	—	—
Rock Island	1	1	W	W	—	—	W	W	W	—	—	—
Sangamon	5	5	940	264	—	125	1,329	2,721	1,329	—	—	—
Schuyler	1	1	W	W	—	—	W	W	W	—	—	—
Shelby	1	1	W	W	—	W	W	W	W	—	—	—
Stark	1	1	—	W	—	—	W	W	W	—	—	—
Stephenson	1	1	W	W	—	—	W	W	—	—	—	W
Tazewell	4	7	W	W	—	W	1,286	2,735	1,286	—	—	—
Union	2	2	W	W	—	W	W	W	W	—	—	—
Vermilion	5	5	W	W	—	108	211	248	211	—	—	—
Wabash	3	3	48	51	—	—	99	189	99	—	—	—
White	4	4	235	W	—	W	287	378	287	—	—	—
Whiteside	3	3	W	W	—	—	207	381	207	—	—	—
Will	6	7	382	1,125	—	223	1,730	3,393	1,674	W	—	W
Winnebago	6	8	653	415	—	40	1,108	1,737	W	W	—	—
Woodford	5	5	298	621	—	W	919 ^c	2,391	919 ^c	—	—	—
Various	1	1	W	W	—	—	W	W	W	—	—	W
Concealments ^{ae}			7,376	3,068	—	1,529	6,177	10,538	11,274	3,483	2,921	375
State Total	182	204	16,140	15,336	4,400	3,123	39,000	\$83,515	32,199	3,483	2,921	397

^aFrom commercial operations only; does not include government and contractor operations.

^bW = withheld and not included in total.

^cWithheld included in concealments.

^dIndustrial sand production not reported, but a new plant was operating in Ogle County.

^eCounty location not reported.

Source: U.S. Bureau of Mines.

Stone

Production

In spite of a 4.1 percent decrease in total stone production from 1974 (63.2 million tons) to 1975 (60.6 million tons), the total value of stone production increased 6.8 percent. The increase in total value to \$130 million resulted from an increase in per ton value—\$2.14 in 1975 as compared to \$1.93 in 1974 (table 23).

Of the 60.6 million tons of crushed and broken stone produced in 1975, 40.5 million tons were limestone and 20.1 million tons were dolomite (table 24). In addition to crushed and broken stone, Illinois produced a small amount of dimension stone (stone quarried and prepared in blocks according to specifications) in Kane County.

In 1975, one dimension-stone

TABLE 21—ILLINOIS SAND AND GRAVEL PRODUCTION, BY SIZE OF OPERATION^a, 1974 AND 1975

Size of operation (tons per year)	1975			1974		
	Number of operations ^a	Production (1000 tons)	Percentage of commercial production	Number of operations ^a	Production (1000 tons)	Percentage of commercial production
less than 25,000	49	596	1.5	58	627	1.6
25,000 to 49,999	33	1,218	3.1	35	1,233	3.0
50,000 to 99,999	29	1,832	4.7	46	3,251	8.0
100,000 to 199,999	42	6,225	16.0	39	5,545	13.6
200,000 to 299,999	12	2,905	7.4	12	3,029	7.4
300,000 to 399,999	15	5,412	13.9	12	4,363	11.0
400,000 to 499,999	4	1,891	4.9	7	3,036	7.4
500,000 to 599,999	4	2,184	5.6	3	1,612	4.0
600,000 to 699,999	2	1,273	3.3	2	1,317	3.2
700,000 to 799,999	3	2,341	6.0	3	2,156	5.3
800,000 to 899,999	3	2,586	6.6	1	807	2.0
900,000 to 999,999	3	2,809	7.2	4	3,826	9.4
1,000,000 and over	5	7,728	19.8	5	9,819	24.1
Total	204	39,000	100.0	227	40,621	100.0

^aCommercial operation only; does not include government and contractor operations.
Source: U.S. Bureau of Mines.

TABLE 22—ILLINOIS SAND AND GRAVEL SOLD OR USED BY PRODUCER, BY CLASS OF OPERATION AND USE, 1974 AND 1975

Class of operation and use	1975		1974		Change in quantity from 1974 to 1975 (%)	Change in value from 1974 to 1975 (%)
	Quantity (1000 tons)	Value (\$1000)	Quantity (1000 tons)	Value (\$1000)		
Construction aggregates						
Sand and gravel						
Commercial operations						
Building	11,773	20,551	13,780	20,459	- 14.56	+ 0.45
Paving	10,323	18,029	12,988	20,248	- 20.52	- 10.96
Fill	3,289	4,592	6,947	8,031	- 52.66	- 42.82
Other uses ^a	279	486	748	1,217	- 62.70	- 60.07
Total ^b	25,664	43,658	34,463	49,955	- 25.53	- 12.61
Government and contractor						
Building	401	750	278	398	+ 44.24	+ 88.44
Paving	7,472	14,038	5,536	8,915	+ 34.97	+ 57.46
Fill	986	1,435	322	511	+206.21	+180.82
Other uses	76	82	22	49	+245.45	+ 67.35
Total ^b	8,935	16,305	6,158	9,873	+ 45.10	+ 65.15
Industrial sand						
Blast	71	437	174	702	- 59.20	- 37.75
Molding	915	5,045	803	3,476	+ 13.95	+ 45.14
Glass	2,125	9,619	873	2,805	+143.41	+242.92
Other uses ^c	1,289	8,450	234	1,755	+450.85	+381.48
Total ^b	4,400	23,551	2,084	8,738	+111.13	169.52
Total sand and gravel	39,000	83,515	42,705	68,566	- 8.68	+ 21.80

^aIncludes railroad ballast.

^bNumbers are rounded and totals do not necessarily add up.

^cIncludes engine, filtration, foundry use, grinding and polishing, oil hydrofrac, pottery, abrasives, chemicals, enamel, and other uses.

Source: U.S. Bureau of Mines.

quarry and 324 limestone and/or dolomite quarries were operating in Illinois. Sixty-nine counties reported stone production in 1975—six more than in 1974 (fig. 10), with 120 companies producing stone in 1975.

Illinois stone production by size of operation is shown in table 25. The number of quarries producing between 100,000 and 500,000 tons per year is steadily increasing. Quarries producing more than 500,000 tons per year steadily increased until leveling off in 1975. The increase in size of operation basically reflects the entry of larger companies into the aggregate business. Large companies have sufficient capital to expand an operation and, as a result, benefit from economies of scale. But because most of the very large companies are established at this point, entry by large firms has slowed.

Shipment

Shipment of stone, a bulk commodity, is confined primarily to areas near the quarry. Because the hauling distance is short, most stone is shipped by truck. In 1975, of the state's total production (60.6 million tons), 91.9 percent, or 55.7 million tons, was shipped by truck (table 24). Other modes of shipment included rail (2.3 million tons) and barge (2.1 million tons).

Consumption and uses

Stone produced in Illinois may be classified according to use: (1) for construction aggregate, (2) for industrial and chemical use, and (3) for agriculture. In 1975, of the 60.6 million tons of stone produced in Illinois, 49.0 million tons (80.9 percent) were used for construction

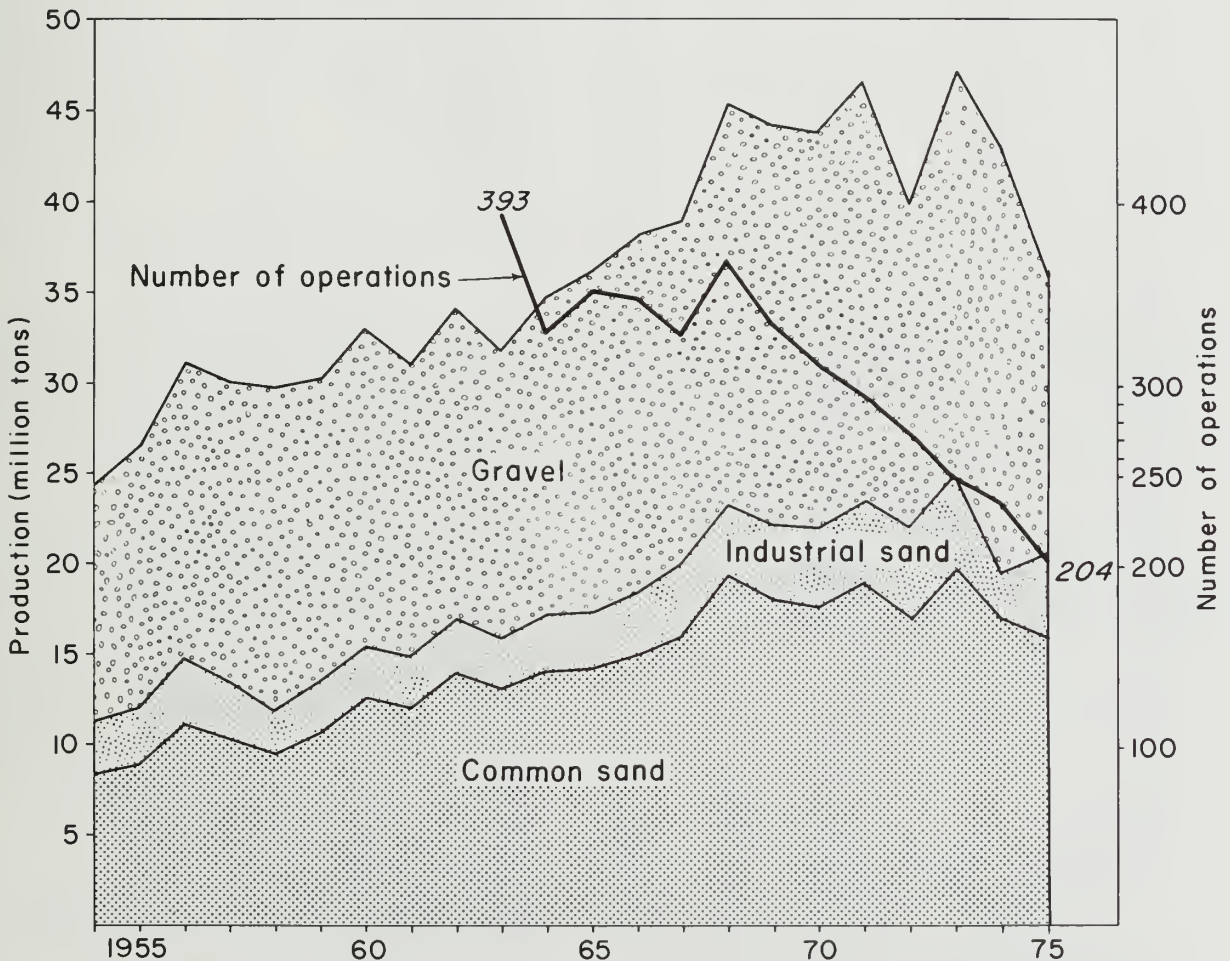


Fig. 9 - Trends in production of sand and gravel in Illinois, 1954-1975.

TABLE 23—PRODUCTION AND VALUE OF ILLINOIS STONE, BY COUNTY
AND MODE OF TRANSPORTATION, 1975

County	Number of quarries	Crushed and broken		Production		Mode of transportation			
		Limestone (tons)	Dolomite (tons)	Tons	Value (\$)	Truck (tons)	Rail (tons)	Barge (tons)	Unspecified (tons)
Adams	11	979,841	—	979,841	4,904,825	777,827	202,014	—	—
Boone	2	—	W ^a	W	W	W	—	—	—
Brown	1	W	W ^a	W	W	W	—	—	—
Calhoun	3	21,438	—	21,438	51,538	21,237	—	201	—
Carroll	9	352,379	—	352,379	657,448	352,379	—	—	—
Christian	2	710,500	—	710,500	1,626,000	710,500	—	—	—
Clark	4	W	—	W	W	W	—	—	—
Clay	2	W	—	W	W	W	—	—	—
Clinton	3	W	—	W	W	W	—	—	—
Coles	4	492,678	—	492,678	1,645,891	492,678	—	—	—
Cook	7	W	W	14,972,663	29,006,435	14,209,189	753,474	10,000	—
Cumberland	1	1,923	—	1,923	4,808	1,923	—	—	—
De Kalb	2	W	W	W	W	W	—	—	—
De Kalb	2	W	—	W	W	W	—	—	—
O Douglas	2	W	—	W	W	W	—	—	—
Ou Page	4	W	W	W	W	W	—	—	—
Effingham	1	3,328	—	3,328	6,847	3,328	—	—	—
Fayette	2	257,589	—	257,589	696,149	257,589	—	—	—
Ford	1	3,432	—	3,432	6,864	3,432	—	—	—
Greene	5	365,328	—	365,328	W	365,328	—	—	—
Grundy	1	340	—	340	850	340	—	—	—
Hancock	3	498,008	—	498,008	1,151,221	498,008	—	—	—
Hardin	8	2,272,755	—	2,272,755	4,108,540	2,257,925	—	14,830	—
Henderson	4	W	W	543,809	1,195,595	543,809	—	—	—
Henry	1	W	—	W	W	W	—	—	—
Iroquois	1	W	—	W	W	W	—	—	—
Jackson	2	W	—	W	W	W	—	—	—
Jersey	3	118,647	—	118,647	256,705	118,647	—	—	—
Jo Daviess	19	W	W	391,626	528,965	391,626	—	—	—
Johnson	3	W	—	W	W	W	W	—	—
Kane	3	1,041,516	—	1,041,516	2,240,443	1,041,516	—	—	—
Kankakee	6	W	W	2,229,081	4,400,286	1,726,778	502,303	—	—
Kendall	1	W	W	W	W	W	—	—	—
Knox	1	W	—	W	W	W	—	—	—
La Salle	10	2,082,743	—	2,082,743	4,194,013	1,639,743	—	—	443,000
Lee	7	977,000	432,054	1,409,054	2,488,210	1,409,054	—	—	—
Livingston	6	2,302,454	—	2,302,454	5,262,710	2,302,454	—	—	—
Logan	2	W	—	W	W	W	—	—	—
McDonough	2	W	—	W	W	W	—	—	—
McLean	2	6,581	—	6,581	13,162	6,581	—	—	—
Macoupin	1	W	—	W	W	W	—	—	—
Madison	4	1,245,325	—	1,245,325	3,098,398	1,245,325	—	—	—
Marion	1	W	—	W	W	W	—	—	—
Menard	3	W	—	W	W	W	—	—	—
Mercer	2	W	—	W	W	W	—	—	—
Monroe	4	W	—	W	W	W	W ^b	—	—
Montgomery	8	1,239,950	—	1,239,950	3,002,727	1,239,950	—	—	—
Moultrie	1	4,803	—	4,803	10,086	4,803	—	—	—
Ogle	15	521,447	91,800	613,247	1,207,640	613,247	—	—	—
Peoria	1	W	—	W	W	W	—	—	—
Perry	1	10,000	—	10,000	20,000	10,000	—	—	—
Piatt	1	4,115	—	4,115	12,345	4,115	—	—	—
Pike	7	538,183	—	538,183	1,144,316	538,183	—	—	—
Pope	1	378	—	378	1,502	378	—	—	—
Pulaski	1	W	—	W	W	W	W	—	—
Randolph	3	541,628	—	541,628	1,089,081	437,018	104,610	—	—
Rock Island	6	1,324,815	—	1,324,815	3,160,077	1,324,815	—	—	—
St. Clair	5	3,229,312	—	3,229,312	6,636,949	3,229,312	—	—	—
Saline	1	902	—	902	2,021	902	—	—	—
Sangamon	1	2,377	—	2,377	5,943	2,377	—	—	—
Scott	4	W	—	W	W	W	—	—	—
Shelby	1	W	—	W	W	W	—	—	—
Stephenson	9	274,203	—	274,203	477,786	274,203	—	—	—
Union	4	W	—	W	W	W	W	—	—
Vermilion	2	W	—	W	W	W	—	—	—
Warren	2	W	—	W	W	W	—	—	—
Washington	3	418,043	—	418,043	1,358,025	418,043	—	—	—
Whiteside	6	W	—	W	W	W	—	—	—
Will	10	1,314,262	4,202,294	5,516,556	10,371,799	2,940,372	453,434	2,122,750	—
Winnebago	21	W	W	884,087	1,587,621	884,087	—	—	—
Undistributed ^c	45	842,913	—	842,913	1,837,551	842,913	—	—	—
Concealments		16,550,873	15,358,488	12,888,095	30,553,384	12,566,393	321,702	—	—
Totals	325	40,522,009	20,084,636	60,636,645	130,024,756	55,708,327	2,337,537	2,147,781	443,000

^aW = withheld to avoid disclosing confidential data of individual companies; included in total.

^bIncluded barge with rail to conceal confidential figures.

^cCounty location not reported by producer.

Source: U.S. Bureau of Mines.

TABLE 24—PRODUCTION AND USE OF CRUSHED AND BROKEN STONE
IN ILLINOIS, 1975

Use	Limestone (tons)	Dolomite (tons)	Total (tons)	Percentage of total	Percentage of change from 1974	Average value per ton
Road base stone	12,864,745	5,825,392	18,690,137	30.8	+ 1.1	2.13
Concrete aggregate	6,348,590	3,960,193	10,308,783	17.0	- 4.8	2.11
Surface treatment aggregate	2,717,057	2,522,636	5,239,693	8.6	- 2.0	2.10
Bituminous aggregate	3,533,554	2,784,649	6,318,203	10.4	+ 6.2	2.10
Unspecified construction	5,763,632	2,707,751	8,471,383	9.1	-24.6	2.09
Agricultural purposes ^a	5,207,404	623,664	5,831,068	9.6	+12.1	2.21
Cement	2,393,744	--	2,393,744	3.9	-11.1	1.70
Macadam aggregate	W ^b	W ^c	W ^c	--	--	--
Flux stone	W	W	308,514	0.5	+ 1.3	2.02
Riprap & jetty	617,456	157,158	774,614	1.3	+12.6	2.13
Railroad ballast	W	W	399,932	0.7	-18.0	1.91
Other uses ^d	832,281	1,068,293	1,900,574	8.1	-18.1	2.62
Total	40,552,009	20,084,636	60,636,645	100.0	- 4.1	2.14

^aIncludes agricultural limestone and poultry grit.

^bW = withheld to avoid disclosing confidential data of individual companies; included in total.

^cIncluded with unspecified construction.

^dIncludes stone for asphalt filler, chemicals, lime manufacture, mine dusting, filler, roofing aggregate, fill, waste material, whiting, and other uses.

Source: U.S. Bureau of Mines.

TABLE 25—ILLINOIS STONE PRODUCTION BY SIZE OF OPERATION, 1974 AND 1975

Size of Operation (tons per year)	1975			1974		
	Number of quarries	Production (tons)	Percentage of total	Number of quarries	Production (tons)	Percentage of total
Less than 25,000	156	1,743,945	2.9	104	954,629	1.5
25,000 to 49,999	20	717,773	1.2	61	1,901,750	3.0
50,000 to 74,999	22	1,372,939	2.3	15	901,972	1.4
75,000 to 99,999	10	900,506	1.5	13	1,113,317	1.8
100,000 to 199,999	4	6,294,342	10.4	32	4,586,931	7.3
200,000 to 299,999	25	6,271,346	10.3	22	5,380,399	8.5
300,000 to 399,999	13	4,493,080	7.4	19	6,512,424	10.3
400,000 to 499,999	9	3,944,745	6.5	12	5,461,124	8.6
500,000 to 599,999	4	2,277,667	3.8	3	1,588,809	2.5
600,000 to 699,999	4	2,599,165	4.3	7	4,392,282	7.0
700,000 to 799,999	4	2,986,334	4.9	3	2,346,661	3.7
800,000 to 899,999	3	2,580,182	4.2	5	4,192,533	6.6
900,000 and over	11	24,454,621	40.3	11	23,898,512	37.8
Total	325	60,636,645	100.0	307	63,231,343	100.0

Source: U.S. Bureau of Mines.

aggregate; slightly more than 5.8 million tons (9.6 percent), for agriculture; and slightly less than 5.8 million tons (9.5 percent), for industrial, chemical, and other uses (fig. 11).

Of the 49.0 million tons used for construction aggregate, 38.2 percent was used for road base stone, 21.0 percent for concrete aggregate, 10.6 percent for surface treatment aggregate, 12.9 percent for bituminous aggregate, and the remaining 17.3 percent for macadam and unspecified aggregate (table 25).

High-calcium limestone, usually containing more than 95 percent CaO, was used in 1975 in the manufacture of cement and lime; in iron and steel making (as fluxstone); in rock dusting mines; and in various chemical industries.

In consumption of limestone for agricultural purposes, Illinois ranks second, after Missouri. Primarily to satisfy this large market, Illinois is one of the leading producers of agstone and ground limestone for agricultural purposes.

More than 90 percent of the dimension stone produced in Illinois was used as flagstone. The remainder was used as veneer in house construction.

Tripoli (amorphous silica)

Production

The term "tripoli" refers to several fine-grained, porous, siliceous materials mined in four states: tripoli is produced in Arkansas and Oklahoma; amorphous, or soft, silica is mined in Illinois;

and rottenstone is produced in Pennsylvania. Illinois has been the largest producer of these siliceous materials in recent years, accounting for nearly 70 percent of the total United States production in 1975.

During 1975, amorphous silica was produced from two mines in Alexander County by two companies—the Illinois Minerals Company and Tammsco, Inc. The value of prepared material used or sold decreased 4.6 percent, whereas the quantity produced decreased 10.7 percent from 1974 levels. Most of the Illinois production was processed in the state.

Consumption and uses

The amorphous silica processed in Illinois was used mainly for abrasives and filler. From 1974 to 1975, the percentage of finished material

sold for abrasives decreased from 50.0 percent to 48.0 percent, while that sold for filler increased from 46.2 percent to 48.3 percent.

Metals

Zinc, Lead, and Silver

Production

The metals recovered from ore mined in Illinois during 1975—zinc, lead, and silver—were recovered from fluorspar ore mined in Hardin and Pope Counties by the Allied Chemical Corp. and the Ozark-Mahoning Company.

In 1975, 291,226 tons of fluorspar ore were treated to recover zinc, lead, and silver. In terms of recoverable metal, zinc production increased 22.5 percent, lead production increased 116.6 percent, and silver production increased 289.3 percent. The value of zinc production increased 33.1 percent, that of lead 106.8 percent, and that of silver 263.0 percent.

No silver production was reported for Illinois for the years 1957 through 1970, but due to the rise in the price of silver in the early 1970s, silver has again been recovered from fluorspar and lead-zinc (although not in 1974-1975) or ores since 1971. Data for zinc, lead, and silver production by individual companies are confidential.

Other minerals

Other minerals mined in Illinois include peat, gemstones, and primary barite.

Peat

Although peat is classified as a fuel by the U.S. Bureau of Mines, virtually all commercial sales of peat in the United States (excluding imports) are for agricultural and horticultural purposes. Three major kinds of peat—reed-sedge, moss, and peat humus—were produced in Illinois.

In 1975, Illinois ranked third, after Michigan and Florida, among

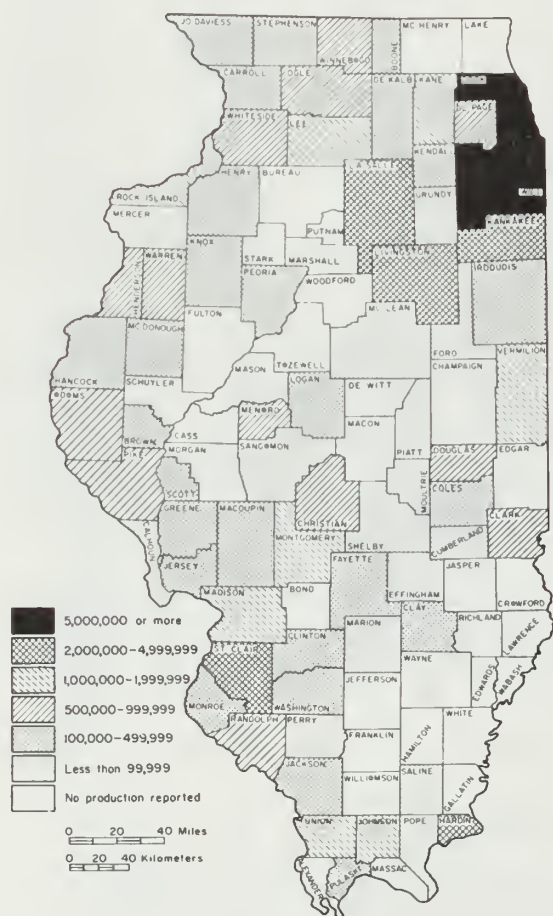


Fig. 10 - Illinois stone production by county, 1975. Source: U.S. Bureau of Mines.

the 22 peat producing states and accounted for 12.5 percent of the nation's total peat production. Six companies produced 96,295 tons of peat from Cook, Kane, Lake, and Whiteside Counties. Production increased by 0.5 percent during 1975 (table 26).

Gemstones

Fluorspar, the gemstone produced in Illinois, contributed very little to the total value of mineral production. The 1975 estimated value for gemstones remained about the same as for 1974—approximately \$2,000.

Primary Barite

Beginning in 1974, primary barite was produced in Illinois in minor amounts as a by-product of the fluorspar industry. In 1975, Allied Chemical Corp. produced barite from one of its fluorspar operations in Hardin County. Barite is used primarily as a weighting agent in drilling muds as well as for the manufacture of paint,

glass, rubber, and the production of barium chemicals.

Mineral Materials Processed

Mineral materials produced mainly in other states and foreign countries but processed in Illinois in 1975 included bismuth, calcined gypsum, columbium, exfoliated vermiculite, expanded perlite, ground barite, iron oxide pigments, natural gas liquids, pig iron, primary slab zinc, rare

TABLE 26—PRODUCTION AND COMMERCIAL SALES OF PEAT IN ILLINOIS, 1970-1975

Year	Number of plants	Production (tons)	Commercial sales (tons)	Value (\$)	Average value per ton (\$)	Illinois production (%) ^a
1970	6	62,990	63,341	711,000	11.23	12.19
1971	7	72,523	71,823	W ^b	W	12.03
1972	5	69,523	74,003	W	W	12.06
1973	6	71,552	71,551	1,037,000	14.49	11.28 ^c
1974	6	95,807	95,807	1,412,000	14.74	13.11
1975	6	96,295	95,719	1,511,401	15.79	12.48

^aIllinois production as percentage of United States production.
^bW = withheld to avoid disclosing data from individual companies.

^cRevised.

Source: U.S. Bureau of Mines.

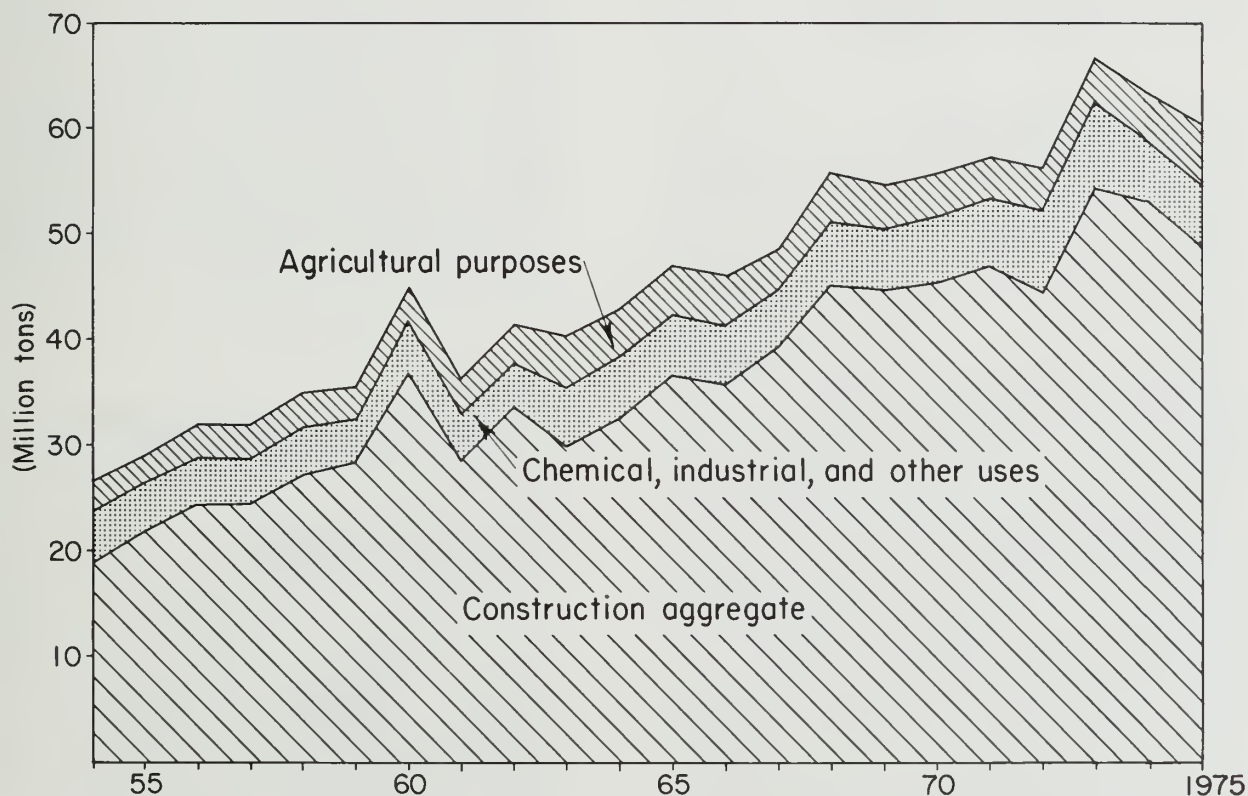


Fig. 11 - Trends in uses of crushed and broken stone produced in Illinois, 1954-1975.

earths, recovered elemental sulfur, and secondary slab zinc.

Bismuth

A small quantity of bismuth was recovered from recycling of secondary material by the United Refining and Smelting Co. at Franklin Park, Cook County. Bismuth is used as a metallurgical additive, in fusible alloys, and in pharmaceutical-chemical applications.

Calcined gypsum

Gypsum, which is imported from out-of-state mines, was calcined at Waukegan, Lake County, by the National Gypsum Company. In 1975 the quantity of gypsum calcined was 3.7 percent lower than in 1974, but the value was 2.1 percent higher.

Columbium

Columbium concentrate from foreign sources and from tin smelter slags was processed by Fansteel, Inc., in North Chicago, Lake County, for use as a ferro-alloy in the steel industry. Figures are not available.

Exfoliated vermiculite

Crude vermiculite mined outside the state was processed at West Chicago, Du Page County, by the Construction Products Division of W. R. Grace and Company; at De Kalb, De Kalb County, by Mica Pellets, Inc.; and at Girard, Macoupin County, by the International Vermiculite Company. About 22 percent of the total amount of exfoliated vermiculite processed was used for loose-fill insulation, and 23.1 percent for block insulation. The 1975 consumption of vermiculite for concrete aggregates and for horticultural uses was 8.9 percent and 11.2 percent of the total processed, respectively. Block insulation, plaster aggregate, fertilizer carrier, soil conditioning, and unspecified uses accounted for the other 34.8 percent of the total. The quantity of exfoliated vermiculite processed

in 1975 was 4.4 percent higher than in 1974, and the value increased by 28.6 percent.

Expanded perlite

Crude perlite mined outside the state was processed by Silbrico Corp. in Cook County; Mica Pellets, Inc. in De Kalb County; Filter Products Corp. and National Gypsum Co. in Lake County; and Johns-Manville Sales Corp. in Will County. Expanded perlite is used as an aggregate for concrete and plaster, for horticultural aggregate, for roof insulating board, for low-temperature insulation, for aid in filtering, and for miscellaneous purposes. The quantity of expanded perlite produced in 1975 showed a 9.8 percent decrease and the value, a 16.2 percent increase from the 1974 levels. Illinois once again led the nation in processing and in producer use and sales of expanded perlite.

Ground barite

In 1975 ground barite was processed in East St. Louis in St. Clair County by Pfizer, Inc. The 1975 value was 52.4 percent lower than that of 1974, and production decreased 52.5 percent from the 1974 level. Barite is used mainly as a weighting agent in oil and gas well-drilling muds, as well as in the paint, glass, and rubber manufacturing industries, and in the production of barium chemicals.

Ground mica

Ground mica was no longer processed in Illinois in 1975.

Iron oxide pigments

Iron oxide pigments processed in Illinois in 1975 showed a 30.0 percent decrease in quantity and a 22.4 percent decrease in value from 1974 levels. The finished pigments were produced from iron ore imported from other states by the Prime Manufacturing Co. of Quincy in Adams County; George B. Smith Chemical Works of

Maple Park in Kane County; Pfizer, Inc. of East St. Louis in St. Clair County; and Solomon Grinding Service of Springfield in Sangamon County. Illinois ranked second in the production of finished iron oxide pigments.

Natural gas liquids

Natural gas liquids include ethane, propane, isobutane, unsplit butane, and a combination of gasoline and liquefied petroleum gas (LPG). Natural gas was processed in 1975 in Douglas County at the Tuscola plant of the United States Industrial Chemical Co., a Division of National Distillers and Chemical Corp.

Pig iron and raw steel

During 1975, 5.2 million tons of pig iron, valued at \$905.5 million, were produced in blast furnaces in Illinois. Production decreased by 27.4 percent, but value decreased by only 9.8 percent from the 1974 levels. Four of the five Illinois steel plants are located in Cook County—Interlake Steel Co., International Harvester Company's Wisconsin Steel Division, United States Steel Corp., and Republic Steel Corp. The fifth plant, Granite City Steel Division of National Steel Corp., is in Madison County. According to the American Iron and Steel Institute, 9.6 million tons of raw steel were produced in Illinois in 1975, a decrease of 26.2 percent from the 1974 level of 12.9 million tons.

Primary slab zinc

Special high-grade zinc was processed from domestic and foreign ores and concentrates at the electrolytic zinc plant operated by AMAX, Inc. at Sauget in St. Clair County.

Recovered elemental sulfur

During 1975, elemental sulfur was recovered by eight companies in seven counties: Union Oil Co. of California at its Chicago plant in Cook County; Marathon Oil Co. at its

Robinson refinery in Crawford County; Natural Gas Pipeline Co. of America at its St. Elmo plant in Fayette County and at its Herscher plant in Kankakee County; Texaco Inc. at its Lawrenceville plant in Lawrence County and at its Lockport plant in Will County; Shell Oil Co. at its Hartford refinery in Madison County; and Mobil Oil Corp. at its Joliet refinery in Will County.

The amount of sulfur recovered in 1975 was 7.6 percent higher than that recovered in 1974, and the value 22.7 percent higher. Illinois ranked sixth in the nation in quantity of recovered elemental sulfur and seventh in value.

Secondary slab zinc

During 1975, secondary slab zinc was produced by Apex Smelting Co. at Chicago, Cook County, and by Sandoval Zinc Co. at Sandoval, Marion County.

Mineral products manufactured

The mineral products manufactured in Illinois in 1975 from crude mineral materials mined in Illinois and/or elsewhere included cement, clay products, lime, coke, and glass. Available statistical data on production, consumption, and uses are given below.

Cement

Production

In 1975 in Illinois 1,480,628 tons of finished portland cement and 66,508 tons of prepared masonry cement were manufactured, a 7.0 percent decrease in production of portland cement and a 13.6 percent decrease in production of masonry cement from 1974. Cement was produced by four companies in Illinois—Centex Corporation at La Salle in La Salle County, Marquette Cement Manufacturing Company at Oglesby in La Salle County, Medusa Cement Co. at Dixon in Lee County, and Missouri Portland Cement Co. at Joppa in Massac County.

Finished portland cement shipments totaling 1,373,460 tons were valued at \$42.8 million, a 5.9 percent decrease in quantity and a 4.2 percent increase in value from 1974 levels. Prepared masonry cement shipments totaling 69,383 tons were valued at \$3.7 million, a 0.3 percent increase in quantity and a 13.3 percent increase in value from 1974 levels (table 27).

The raw materials used in the manufacture of portland cement included limestone, sandstone, shale, clay, sand, slag, fly ash, and gypsum. All of the 2,393,744 tons of crushed limestone produced in Illinois for use in cement manufacture in 1975 were consumed within the state, and an additional 45,287 tons were imported from other states for this purpose.

Bulk shipments of cement from Illinois plants to customers were made by truck, rail, and barge. Of the total shipment in bulk, 97.3 percent was transported by truck. Of the total container shipments, 94.1 percent went by truck and 5.9 percent by rail.

Consumption

A total of 3,281,000 tons of portland cement was consumed in Illinois in 1975—312,000 tons less than the amount consumed during 1974 (fig. 12). Only 45.1 percent of the portland cement consumed in Illinois was produced in the state. The other 54.9 percent was imported from other states.

In 1975, Illinois consumed 101,000 tons of masonry cement—16,000 tons less than in 1974 (fig. 13). Of the total Illinois consumption of masonry cement, 68.7 percent came from Illinois plants. The amount of masonry cement imported into the state decreased in 1975 for the first time in 8 years.

Coke

Production

In 1975, a total of 1,924,000 tons of coke was produced and 251,000 tons of coke breeze were recovered in Illinois from four oven-coke operations—three in Cook County and one

TABLE 27—PRODUCTION AND VALUE OF CEMENT MANUFACTURED IN ILLINOIS, 1974 AND 1975

	Finished portland cement			Prepared masonry cement		
	1975	1974	Percentage of change from 1974 to 1975	1975	1974	Percentage of change from 1974 to 1975
Number of active plants	4	4		2	2	
Production (tons)	1,480,628	1,592,249	- 7.01	66,508	76,950	- 13.57
Shipment from mills						
Quantity (tons)	1,373,960	1,460,237	- 5.91	69,383	69,163	+ 0.32
Value	\$42,755,837	\$41,022,966	+ 4.20	\$3,658,146	\$3,228,203	+ 13.32
Average value per ton	\$31.12	\$28.10	+ 10.75	\$52.72	\$46.68	+ 12.94
Stocks at mills, Dec. 31 (tons)	155,327	176,094	- 11.79	10,558	13,217	- 20.12

Source: U.S. Bureau of Mines.

TABLE 28—PRODUCTION AND CONSUMPTION OF COKE IN ILLINOIS, BY USE, 1971-1975 (1000 tons)

Year	Coke Production	Coke uses (1000 tons)				Total coke consumption ^a	Breeze production	Total breeze consumption
		Blast furnace	Foundry	Other industrial plants	Residential heating			
1975	1,924	2,954	148	19	— ^b	3,122	251	334
1974	1,912	2,867	213	32	— ^b	3,112	212	365
1973	1,941	3,610	204	28	1	3,843	223	241
1972	2,085	2,993	189	16	4	3,201	186	278
1971	2,144	3,298	178	26	3	3,505	189	367

^aData may not add to totals shown because of independent rounding.

^bIncluded with "Other industrial plants."

Source: U.S. Bureau of Mines.

in Madison County. Production was up 0.6 percent for coke and 18.4 percent for breeze from 1974 (table 28). On the basis of an average value of \$87.64 per ton, up \$21.90 per ton from 1974, received by producers for all grades of coke, Illinois coal production for 1975 was worth \$168.6 million, 34.2 percent higher than the 1974 value (table 29). Of the coke produced in 1975, 91.7 percent was used in blast furnaces by the producing companies, and the remainder was sold. By-products, other than coke breeze, recovered at Illinois oven-coke plants included coke oven gas, tar, crude light-oil, and ammonia.

The coal used for the manufacture of coke in Illinois in 1975 came from Illinois as well as from six other states—Kentucky, West Virginia, Pennsylvania, Virginia, Arkansas, and Oklahoma. Illinois contributed 33.8 percent and Kentucky 37.5 percent (table 29). In 1975, Arkansas' shipment was nearly double that of its first shipment of 105,000 tons in 1972.

Illinois coal used for coking purposes was shipped primarily from mines in Franklin, Jefferson, and Saline Counties, according to the U.S. Bureau of Mines.

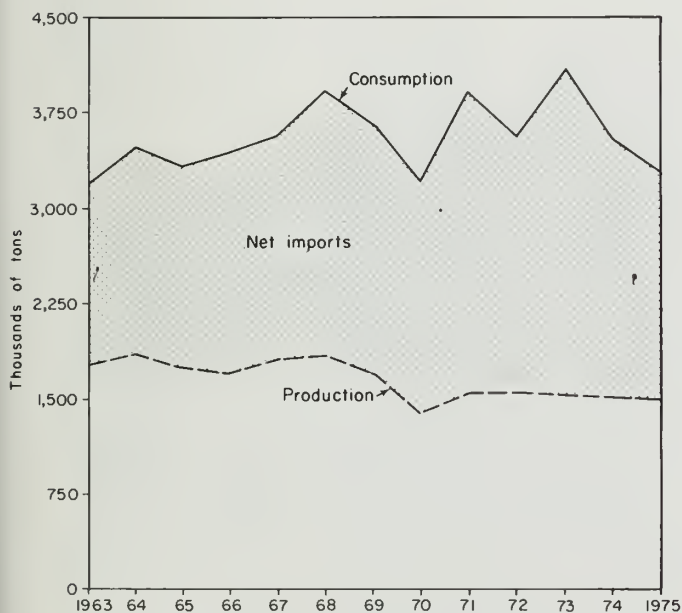


Fig. 12 - Production and consumption of finished portland cement in Illinois, 1963-1975.

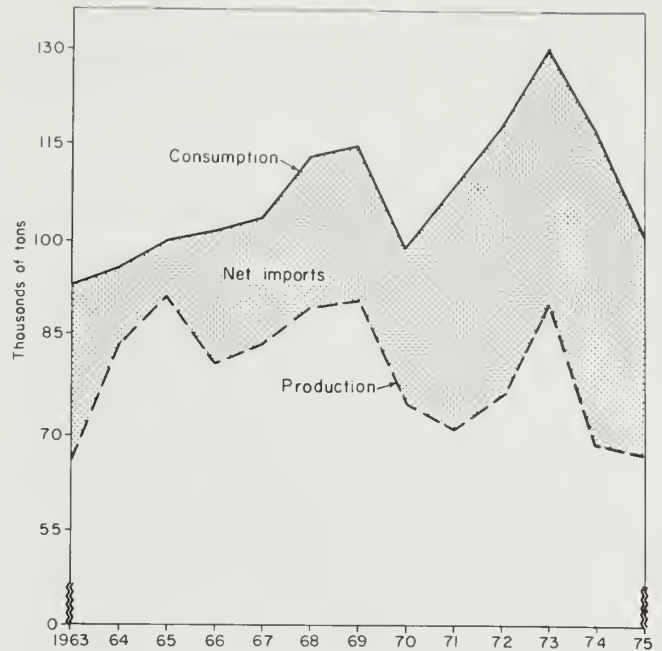


Fig. 13 - Production and consumption of prepared masonry cement in Illinois, 1963-1975.

Consumption and uses

Illinois consumed 3,122,000 tons of coke and 334,000 tons of coke breeze in 1975 (table 28), a 0.3 percent increase in coke and an 8.5 percent decrease in breeze from 1974 consumption levels. Coke is used in the production of pig iron, in foundry and other industrial purposes, and in residential heating. Coke breeze was used for fuel in steam plants, in agglomerating plants, and elsewhere.

Lime

Production

In 1975, Illinois ranked seventh in the nation in lime production. Hydrated lime and quicklime were produced by two companies: Marblehead Lime Company's two plants and Vulcan Materials Company's plant, all in Cook County. The total amount produced in 1975 was 15.0 percent below the 1974 level (fig. 14). The lime was shipped to consumers in Illinois, adjoining states, and Canada.

TABLE 29—QUANTITY AND VALUE OF COKE AND BY-PRODUCTS PRODUCED, SOLD, OR USED
BY PRODUCER IN ILLINOIS, 1974 AND 1975

Coke and by-products	Unit	1975			1974		
		Quantity	Value at plant		Quantity	Value at plant	
			Total (\$1000)	Average (\$ per ton)		Total (\$1000)	Average (\$ per ton)
Plants in operation		4			4		
Coal, carbonized	thousand tons	3,087	122,849	39.80	3,013	98,910	32.83
Coal per ton of coke	tons	1.60	—	63.68	1.58	—	51.87
Coke produced	thousand tons	1,924	168,619	87.64	1,912	125,694	65.74
Coke yield, percent of coal carbonized	percent	62.33	—	—	63.46	—	—
Source of coal carbonized							
Illinois	thousand tons	1,038	—	—	1,060	—	—
Kentucky	thousand tons	1,154	—	—	1,122	—	—
West Virginia	thousand tons	554	—	—	558	—	—
Pennsylvania	thousand tons	6	—	—	24	—	—
Virginia	thousand tons	92	—	—	51	—	—
Arkansas	thousand tons	209	—	—	178	—	—
Oklahoma	thousand tons	22	—	—	—	—	—
Total	thousand tons	3,074	—	—	2,992	—	—
From stock	thousand tons	13	—	—	21	—	—
Coke sold or used by producer							
Blast furnace	thousand tons	1,764	129,214	—	1,807	116,740	—
Other purposes	thousand tons	W ^a	W	—	W	W	—
Commercial sales							
Blast furnaces	thousand tons	W	W	—	W	W	—
Other industrial plants	thousand tons	—	—	—	—	—	—
Residential	thousand tons	—	—	—	—	—	—
Coke oven by-products							
Ammonia produced (sulfate equivalent)	thousand tons	24	—	—	23	—	—
Per ton of coal coked	lb	15.55	—	—	15.27	—	—
Sulfate equivalent sold	thousand tons	19	1,344	—	24	1,310	—
Coke oven gas produced	million cu ft	30,794	—	—	30,245	—	—
Per ton of coal	thousand cu ft	9.98	—	—	10.04	—	—
Used in heating coke ovens	million cu ft	14,335	—	—	13,409	—	—
Surplus used or sold	million cu ft	13,649	6,592	0.483/Mcf	15,711	5,498	0.35/Mcf
Wasted	million cu ft	2,810	—	—	1,125	—	—
Light oil and derivatives sold	thousand gal	7,008	—	—	7,048	—	—
Tar produced	thousand gal	20,598	—	—	19,728	—	—
Per ton of coal coked	gal	6.67	—	—	6.55	—	—
Used by producers	thousand gal	W	—	—	W	—	—
Sold for refining	thousand gal	14,699	4,646	0.316/gal	16,067	4,192	0.26/gal
Total coke and by-products sold or used (excluding light oil and derivatives sold)			181,201			136,694	

^aW = withheld to avoid disclosure of data from individual companies.
Source: U.S. Bureau of Mines.

Consumption and uses

A total of 877,114 tons of lime was consumed in Illinois, 24.7 percent less than in 1974 (fig. 14). The lime was used for steel furnaces, refractories, water purification, sewage treatment, and other purposes. Although Illinois lime production declined in 1975, Illinois consumption also declined to the point that the state became a net exporter of lime for the first time in many years.

Clay products

To obtain accurate, current information about the amount and value of clay products manufactured in Illinois, the Illinois State Geological Survey each year sends questionnaires to all producers in the state. Of the twenty-four companies responding to the canvass for 1975, eleven reported clay mining operations.

Clay products valued at \$49.7 million were produced in Illinois in 1975. Included are whiteware and pottery (\$15.9 million), structural clay products such as brick, drain tile, and sewer pipe (\$13.2 million),

refractories (\$15.9 million), and lightweight aggregate and other products (\$4.7 million).

REVIEW OF PRELIMINARY MINERAL PRODUCTION DATA FOR 1976

According to the United States Bureau of Mines, preliminary figures for 1976 show that Illinois ranked first in the nation in the production of fluorspar, tripoli, and stone; third in production of peat; and fourth in sand and gravel and coal.

Once again coal was the leading mineral commodity in value for 1976, accounting for \$915.1 million or 63.4 percent of the total value of Illinois mineral materials.

Mineral materials mined

Preliminary production data for Illinois indicate that the total value of mineral materials mined reached a record high of \$1,442 million—a 4.3 increase over the value reported for 1975 (table 30). The increase in value resulted from greater production of several minerals and from a general rise in mineral commodity prices.

Fuels

Mineral fuels produced during 1976—coal, oil, and natural gas—were valued at \$1,193.9 million. Of this amount, 76.6 percent came from coal, 23.3 percent from oil, and the remaining 0.1 percent from natural gas. In 1975, the value of mineral fuels produced totaled \$1,146 million.

Coal

Illinois coal production dropped from 59.5 million tons in 1975 to 58.1 million tons in 1976. Coal production declined in most eastern and midwestern states while production increased in all western coal mining states, mainly because of increased use of low-sulfur coal from western states and an increase in coal-fired generation in the western and Gulf states. However, the average f.o.b.

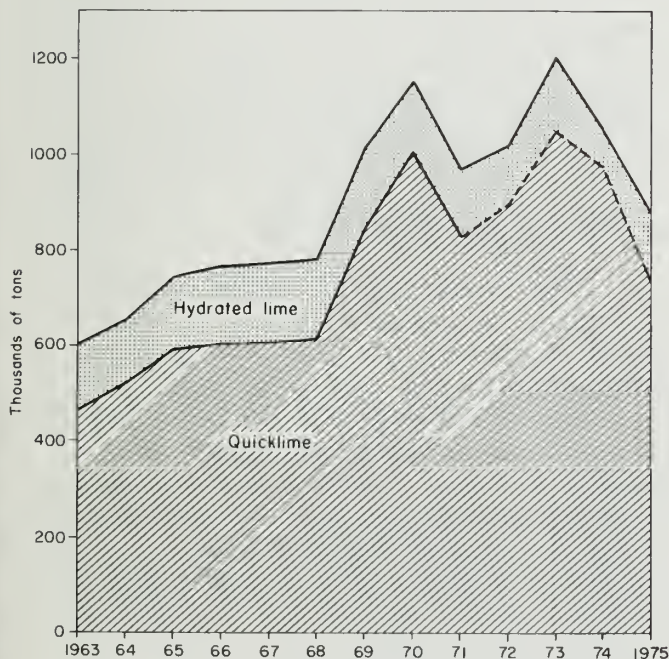


Fig. 14 - Trends in consumption of quicklime and hydrated lime in Illinois, 1963-1975. Source: U.S. Bureau of Mines.

TABLE 30—PRELIMINARY MINERAL PRODUCTION DATA FOR 1976

Commodity	Unit	Quantity	Value (thousand \$)	Quantity	Value (thousand \$)	Percentage of change from 1975 to 1976	
						Quantity	Value
MINERAL MATERIALS MINED							
Fuels							
Coal	thousand tons	58,100	915,075	59,539	871,651	- 2.4	+ 5.0
Crude oil	thousand bbl	26,438	277,599	26,067	273,179	+ 1.4	+ 1.6
Natural gas	thousand Mcf	1,427	1,249	1,440	1,008	- 0.9	+23.9
Industrial and construction materials							
Stone ^a	thousand tons	60,766	132,862	60,637	130,025	+ 0.2	+ 2.2
Sand and gravel	thousand tons	40,000	85,656 ^b	39,000	83,515	+ 2.6	+ 2.6
Clays	thousand tons	1,408	3,510	1,367	3,249	+ 3.0	+ 8.0
Fluorspar	thousand tons	142,691	15,837	99,898	8,957	+42.8	+76.8
Tripoli	thousand tons	W ^c	W	W	W	+12.3	+23.4
Metals							
Lead	thousand lb	W	W	1,068	459	W	W
Zinc	thousand lb	W	W	W	W	-31.6	-35.1
Silver	thousand troy ounces	W	W	W	W	-71.4	-75.9
Others							
Peat	thousand tons	89	1,541	96	1,511	- 7.3	+ 2.0
Gemstones	--	NA ^d	2	NA	2	--	0.0
Germanium	--	NA	NA	NA	NA	--	--
Barite	tons	W	W	W	W	+44.4	+42.1
Values that cannot be disclosed (W)			8,968	--	9,886	--	- 9.3
Total value of mineral materials mined			1,442,299	--	1,383,441	--	+ 4.3

^aExcludes dimension stone; included with value of items indicated by symbol W. Excludes fuller's earth; included with value of items indicated by symbol W.

^bPreliminary value based on 1975 average unit value.

^cW = withheld to avoid disclosing individual company confidential data.

^dNA = not available.

Sources: U.S. Bureau of Mines, Illinois Department of Mines and Minerals, and Oil and Gas Section of the Illinois State Geological Survey.

mine value of Illinois coal increased from \$14.64 per ton in 1975 to \$15.75 per ton in 1976, and, as a result, the value of coal produced showed a 5.0 percent increase over the 1975 level. Of the total 58.1 million tons of coal produced in Illinois, 30.9 million tons, or 53.2 percent, came from underground mines, and 27.2 million tons, or 46.8 percent, came from surface mines.

In 1976 as in 1975, 20 counties reported coal production. According to the Illinois Department of Mines and Minerals, 62 coal mines actively operated in Illinois during 1976, including 23 underground mines and 39 surface mines. The number of persons employed in coal mines increased from 13,646 in 1975 to 14,731 in 1976, the seventh consecutive year in which employment in Illinois coal mines has increased, even though the number of mines has increased for only the last two years.

The various consuming sectors and the states to which Illinois coals

were shipped in 1976 are shown in table 31 and table 32, respectively.

To meet the projected increase in demand for coal, several new mines are being constructed or planned in Illinois. New mines which have been officially announced as of mid-January 1977 are listed in tables 33 and 34.

Crude oil and natural gas

The production of crude oil in Illinois increased slightly in 1976 to 26.4 million barrels, 1.4 percent greater than the 1975 production. At an average value of \$10.50 per barrel, the 1976 production was valued at \$277.6 million. The marketed production of natural gas in 1976 declined slightly despite the continued increase in demand. Although total natural gas marketed from Illinois fields in 1976 was 1,427 million cubic feet—0.9 percent decline from the 1975 production level, the average price showed a marked increase. Therefore, the value of natural gas

marketed, \$1.25 million, was 23.9 percent higher than in 1975.

These increased prices spurred drilling in Illinois to a 1976 total of 3,266,193 feet—a 32.1 percent increase over the 1975 total footage drilled for oil and gas. The 1,257 new holes drilled for oil and gas in 1976 (up 38 percent from 1975) included 135 holes drilled in connection with Marathon Oil Company's Maraflood tertiary recovery projects in the Main Consolidated field in Crawford County. These new holes resulted in 721 oil wells, 11 gas wells, and 525 dry holes. New holes were drilled for oil and gas tests in 52 of the 102 counties in Illinois, and 46 counties had at least one wildcat (half a mile or more from production). In addition to the new holes drilled, 45 former dry holes were reworked and recompleted as oil producers and 18 former producers were recompleted in new pay zones.

As a result of the increased drilling activity, 21 extensions to fields and 23 new pay zones in existing fields were discovered in 1976, but none of these new discoveries added significantly to Illinois oil and gas reserves.

Industrial and construction materials

Favorable construction and industrial markets caused a slight increase in production of stone, sand and gravel, clay, and a marked increase in production of fluorspar in 1976. According to U.S. Bureau

TABLE 32—COAL SHIPMENTS FROM ILLINOIS TO CONSUMING STATES, 1975 AND 1976
(1000 unit tons)

Consuming state	1975	1976	Percentage of change
Illinois	26,044	24,972	- 4.1
Missouri	12,054	13,672	+13.4
Indiana	6,273	6,080	- 3.1
Wisconsin	5,110	4,663	- 8.7
Iowa	3,017	2,839	- 5.9
Kentucky	1,982	1,487	-25.0
Minnesota	1,688	1,530	- 9.4
Mississippi	924	537	-41.9
Michigan	640	702	+ 9.7
Georgia-Florida	987	1,525	+54.5
Tennessee	521	456	-12.5
Alabama	398	--	--
Other states	146	28	-80.8
Exports (Mexico & Canada)	245	35	-85.7
Total	60,029	58,526	- 2.5

Source: U.S. Bureau of Mines Bituminous Coal and Lignite Distribution, Calendar year 1976 and 1975.

of Mines estimates, Illinois stone production increased 0.2 percent, sand and gravel 2.6 percent, clays 3.1 percent, and fluorspar 42.8 percent.

Metals and other minerals

In Illinois in 1976, lead, zinc, barite, and some silver were recovered as by-products of fluorspar production. The total value of metals mined was \$2,673,000, down 39.4 percent from the 1975 value. The value of barite, however, increased 42.1 percent over the 1975 level.

Illinois peat production in 1976 declined to 89,000 tons and was valued at \$1,541,000. In 1976 as in 1975, the gemstone mined in Illinois—fluorspar—contributed \$2,000 to the total value of mineral materials mined.

Mineral materials processed

Preliminary data for most mineral materials processed in Illinois in 1976 are not yet available. Figures for natural gas liquids processed are available although they are withheld to avoid disclosing individual company confidential data. The quantity of natural gas liquids processed declined by 0.8 percent and the value by 0.9 percent from the 1975 levels.

TABLE 31—COAL SHIPMENTS FROM ILLINOIS TO CONSUMING SECTORS IN THE UNITED STATES, 1975 AND 1976
(1000 unit tons)

Consuming Sector	1975	1976	Percentage of change
Electric utilities	49,284	48,930	- 0.7
Coke and gas plants	4,269	3,572	- 16.3
Retail dealers	330	460	+ 39.4
All others	6,004	5,570	- 7.2
Railroads	1	1	0.0
Used at mine	47	46	- 2.1
Mine stock (adjusted)	94	-53	-156.4
Total	60,029	58,526	- 2.5

Source: U.S. Bureau of Mines Bituminous Coal and Lignite Distribution, Calendar year 1976 and 1975.

TABLE 33—NEW COAL MINES ANNOUNCED OR UNDER CONSTRUCTION IN ILLINOIS
(as of August 1977)

Company and mine name	Location	County	Type of mine ^a	Coal seam	Principal market	Scheduled initial production	Capacity at full operation (million tons)	Status
AMAX Coal Co. Ayrcaat Mine	Near Catlin	Vermilion	S	Danville (No. 7)	Steam	NA	2.20	Under construction
AMAX Coal Co. Unnamed	Near Crab Orchard	Williamson	S	Herrin (No. 6)	Steam	1981	1.00	Announced
AMAX Coal Co. Unnamed	NA	NA	U	NA	Steam	1982	2.10	Announced
AMAX Coal Co. Unnamed	NA	NA	S	NA	Steam	1984	1.10	Announced
Arch Minerals Corp. Unnamed	NA	NA	S	NA	Steam	1977	2.00	Announced
Big Ridge Coal Co. Big Ridge No. 1	Near Carterville	Saline	S	NA	Steam(?)	NA	NA	Reopening
Crenshaw Coal Co. Crenshaw No. 1	Near Marion	Williamson	S	NA	NA	NA	NA	Under construction
Crenshaw Coal Co. Crenshaw No. 2	Near Marion	Williamson	S	NA	NA	NA	NA	Under construction
E & B Coal Co. Unnamed	NA	Williamson	S	NA	NA	NA	NA	Under construction
Illinois Coal, Oil & Gas Co. Mine No. 2	NA	Williamson	S	NA	NA	NA	NA	Under construction
Inland Steel Coal Co. Mine No. 2	Near McLeansboro	Hamilton	U	Harrisburg (No. 5)	Metallurgical	1978	2.50	Under construction
Bill V. Martin Coal Co. Unnamed	NA	Pope	S	NA	NA	1977	NA	Reopening
Morris Coal, Inc. Unnamed	South of Pittsburg	Williamson	U	Harrisburg (No. 5)	NA	NA	NA	Under construction
North Side Coal Co.	NA	Williamson	S	NA	NA	NA	NA	Under construction
Old Ben Coal Co. No. 27	Near Thompsonville	Franklin	U	Herrin (No. 6)	Steam	1977	4.00 ^c	Under construction
Oxford Construction Co.	N.W. of Marion	Williamson	S	Herrin (No. 6)	NA	1977	NA	Under construction
Oxford Construction Co.	New Burnside	Johnson	S	New Burnside	NA	NA	NA	Under construction
Parton Coal Co. Div. of United Energies, Inc.	N. of Crab Orchard	Williamson	U	Harrisburg (No. 5)	NA	NA	NA	Reopening
Peabody Coal Co. Baldwin No. 2	NA	Washington	U	Herrin (No. 6)	NA	NA	NA	Under construction
Southern Illinois Minerals Corp. Div. of United Energies Inc. Sato No. 5	Oraville	Jackson	S	Murphysboro	NA	NA	NA	Under construction
Southern Illinois Minerals Corp. Div. of United Energies Inc. Sparta No. 6	Near Sparta	Randolph	S	Herrin (No. 6)	NA	NA	NA	Under construction
Zeigler Coal Co.	NA	Williamson	U	NA	Steam	1978	2.00	Announced

^aS = surface, U = underground.

^bNA = not available.

^cCombined capacity of Old Ben Coal Co., No. 25 and No. 27.

Source: Illinois Department of Mines and Minerals and Coal Age, February 1977.

TABLE 34—EXPANSION OF EXISTING COAL MINES ANNOUNCED IN ILLINOIS
(as of August 1977)

Company and mine name	Location	County	Type of mine ^a	Coal seam	Principal market	Scheduled initial production	Capacity at full operation (million tons)	Status
Amax Coal Co. Delta mine	Near Marion	Williamson and Saline	S	Herrin (No. 6)	Steam	Expansion	2.40	Operating
Wabash mine	Near Keenesbury	Wabash	U	Harrisburg (No. 5)	Steam	Expansion	3.60	Operating
Sunspot	Near Vermont	Fulton	S	Colchester (No. 2)	Steam	Expansion	1.20	Operating
Consolidation Coal Co. Burning Star No. 5	Near DeSoto	Jackson	S	Harrisburg (No. 5) Herrin (No. 6)	Steam	Expansion	2.80	Operating
Burning Star No. 4	Near Cutler	Perry	S	Harrisburg (No. 5) Herrin (No. 6)	Steam	Expansion	2.50	Operating
Freeman United Coal Co. Crown II	Near Virden	Macoupin	U	Herrin (No. 6)	Steam & Metallurgical	Expansion	2.40	Operating
Midland Coal Co. Rapatee	Near Middlegrove	Fulton	S	Harrisburg (No. 5) Herrin (No. 6)	Steam	Expansion	0.70	Operating
Monterey Coal Co. Monterey No. 2	Near Albers	Clinton	U	Herrin (No. 6)	Steam	Expansion	3.60	Operating
Old Ben Coal Co. No. 25	Near Thompsonville	Franklin	U	Herrin (No. 6)	Steam	Expansion	4.00 ^b	Operating
Zeigler Coal Co. No. 5	Murdock	Douglas	U	Herrin (No. 6)	Steam	Expansion	3.00	Operating
No. 11	Near Sparta	Randolph	U	Herrin (No. 6)	Steam	Expansion	1.50	Operating

^aS = surface, U = underground.

^bCombined capacity of Old Ben Coal Co., No. 25 and No. 27.

Source: Illinois Department of Mines and Minerals and Coal Age, February 1977.

Mineral products manufactured

Mineral products manufactured in Illinois in 1976, for which preliminary data are available, include cement, lime, and coke. Both Portland cement (1,760,000 tons), valued at \$56.3 million, and masonry cement (92,000 tons), valued at \$4.9 million, were produced. The amount of lime manufactured was 12.4 percent more and the value 12.2 percent more than in 1975. The quantity of coke manufactured is estimated at 1,706,000 tons. At an average value of \$90.00 per ton, the production was valued at \$153.5 million.

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